The Builder.

VOL. XXXVII. No. 1911. SATURDAY, SEPTEMBER 20, 1879.

ILLUSTRATIONS.

Interior of Proposed (R.C.) Church, Portsmouth 1062

Proposed (R.C.) Church, Edinburgh-road, Portsmouth.—Mr. John Crawley, Architect 1063

CONTENTS.

Architectural Harmony, or the Relation between the Whole and the Parts 1060

Architects' Remunerations: a Foreign View 1061

The Monumental History of Rome and the Middle Ages 1063

The Suburbs of London and their Improvement 1064

A Highland Monument 1065

American and British Iron Trade 1065

From the Banks of the Seine 1066

The Poor in England 1067

The Holloway College for Women, Egham 1067

New Public Baths, Leicester 1067

The Development of the Manufacture of Stoneware for Sanitary and Art Purposes 1068

Dangerous Structures under the Building Act: Remarks on the Law and Practice 1069

Royal Architectural Museum: Presentation of Prizes 1070

Eye, Ear, and Throat Hospital, Shrewsbury 1070

Art and Science at South Kensington 1070

Intended Roman Catholic Church, Edinburgh-road, Portsmouth 1058

Shropshire Archæological Society 1055

New Railway Stations in Preston and Glasgow 1055

The Moore Memorial in Bromham Church, Wiltshire 1055

Sunday Recreations 1055

Salaries of Borough Surveyors 1056

Borough Surveyors 1056

The Qualifications of Surveyors 1056

The Trade-Union Congress at Edinburgh 1057

Public Improvements in Southport 1056

The Destruction of Works of Art in Italy 1058

The House of Rest for Women in Business 1058

Archæological Items 1059

Quay Work at Newcastle-on-Tyne 1059

The Wedgwood Institute, Burslem 1059

Monuments and Statues 1060

Water Supply 1060

Drainage and Sewerage 1060

Dangerous Structures in the City of London 1060

Provincial News 1061

Masters and Men 1061

Clocks and Bells 1061

The Late Mr. Walter Newall 1062

The National School of Art Wood-carving 1062

Tampering with "Time Sheets" 1062

Brick Stealing 1062

Staines Town-hall Competition 1062

Stone v. Cement 1062

Self-Acting Syphons 1062

Church-Building News 1062

Roman Catholic Church-Building News 1063

Stained Glass 1063

Books: Roland's Farming for Pleasure and Profit (Chapman & Hall); Various 1064

Miscellanea 1064

Architectural Harmony, or the Relation between the Whole and the Parts.

AMONG the chief elements of architectural beauty ranks one which, in very much of the building of the present time, is more conspicuous by its neglect than by its observance. It is, however, one on which the magical beauty of the purest classical structures intimately depends. It is one of which the neglect avenges itself; by producing, according to the nature of the case, the effect of the unsatisfactory, the commonplace, or the grotesque. It is a subject to which critical writers on architecture have not failed to allude, and yet the examples, which it is unfortunately too easy to cite, of the neglect to which we have referred, may be taken to prove that the subject has not been so fully brought before the notice of the student as its importance demands.

We refer to that self-contained scale of magnitude in architecture, as that magnitude is regarded by the spectator, which depends on the due relation of the parts to the whole. Broadly stated, of course, it may be said that an appreciation of that relation is one of the very rudiments of study. Its importance is indicated by the use of the term *modulus* in Classic architecture; and the relation of the main features of the Classical orders is, of course, a matter of the most elementary knowledge.

But the subject, though at the first glance elementary, is one from consideration of which the artist can never escape. It pursues him into every corner of the field of his toil. Duly mastered, it is ever available to supply him with some fresh opportunity of indicating his tectonic genius, if happily he possesses it. Conventionally or perfunctorily treated, it is liable at any moment to give occasion to a slip or an oversight which will mar the beauty of what may be otherwise admirable work.

To probe the matter to the core, it may be said that there is a scientific, or structural, reason for the effect produced on the eye by the greater or less amount of accuracy with which the kind of proportion of which we speak is carried out. To the skilled artist of any kind the fitness of a construction for its object is a matter of instinctive perception. Originally, no doubt, it was the artistic instinct that brought into existence, not the rules, but the models, of proportion. It is to the advance of mathematical science that the designer is indebted for the power of saying, with absolute precision, "Such ought to be the strength of such a portion of a building or of a machine." The immense advantages of such science it is not easy to overrate. Works which, when first completed, were considered, as in the case of the Southwark Bridge, to be models of scientific disposal of material, are now known to be so far from attaining such exactness that assertions have been hazarded to the effect that it would pay to take them down, and to rebuild them for the sake of the saving in the metal that would be effected in the new construction. In the exquisite flying buttresses and aërial arches of pointed ecclesiastical work, dating before the revival of letters, or the use of the Arabic numerals, and thus, before the means of any intricate arithmetical calculation were available, we have evidence of the use of models—of tentative structures—by the builders. Unfurnished with the calculus, untaught by earlier example, the architects of those bold structures, which have so often, in different parts of the world, been attributed to the handicraft of the Prince of Darkness, must have made in silence full many an experiment, before they ventured to peril their reputation on a challenge to the unsleeping force of gravitation.

It is not, however, so much purely structural proportion to which we now wish to refer, as what may be called apparent, or harmonic, proportion. And while structural proportion is in truth a matter of geometry, apparent proportion, pursued to its rudiments, is in great measure a matter of material.

If we regard an elevation of any kind from a certain distance, our eyesight only allows us to apprehend the general balance of proportion. But as we approach more closely, we become aware of something more. Instead of the design,—which may be compared to the perspective drawing of the architect,—we become cognisant of the execution. The closer we approach, the more conspicuous are the details. At the distance of half a mile we are only made aware of the fact whether a building is erected of stone or of brick by the tint. At the distance of fifty yards, we become aware of the number and regularity of the joints of the work,—of the size and character of the courses, and of all those numerous details which pertain to execution rather than to design.

It is to the influence of the treatment of these details on general effect that we wish now to call attention. In natural objects, such, for example, as a lofty tree, the ultimate lines of detail that meet, or that elude, the eye are extremely delicate. A mass of foliage, looked at closely, is defined by an immense number of very small curves, each closely resembling the others, but no two of which are absolutely identical in outline. These minute elements, again, are grouped in boughs and branches. There is a constant up-building, which rests the eye by the interposition of stages, or masses, of more than one grade of size, by which the contemplation is allowed to ascend from the part to the whole, or to descend from the whole to the part. In the infinitely small differences of elementary form lies the secret of the richness of nature. The eye instinctively appreciates that difference between the natural and the artificial which is caused by the exact repetition proper to the mode of execution. If an artist were to attempt the construction of an artificial oak or elm, and were to make all the leaves from the same model, and all the forks of the branches from the same model, and then were to build the tree together with mathematical exactitude, he would produce an object that would be very painful to look at. People might say,—"What a wonderful exertion of skill or of labour," but no artist would say,—"What a beautiful object!"

Now the architect has, of necessity, to labour under the disadvantage that his whole has to be produced by the composition of an immense number of parts which are almost exact counterparts of one another. Hence the need that in the grouping of those parts, which is itself also artificial, there should be that true feeling of harmonic proportion which prevents the purely mechanical part of the work from pressing too closely on the imagination.

No better illustration of what we mean can be given than by referring to lace. Any judge of lace, familiar with the products of the various schools,—with the airy spider-work of Mechlin, or with the massive texture, almost as substantial as carved ivory, of some of the most costly rose-point,—knows that there must be a specific unity, so to speak, in the work, in order to make it perfect of its kind. To each pattern or kind of lacework its own stitch is essential; and the work of the amateur is at once betrayed to the real judge of lace by any intermixture of stitches belonging to different styles of work.

On the other hand, let us introduce exact uniformity of detail, as in the case of machine-made lace, and the great source of beauty which we have called richness vanishes. Regarded mathematically, or structurally, a piece of machine-made lace produced by some of those recent improvements which carry the work to so high a degree of excellence, is far superior to a piece of handmade lace of the same pattern. Put each bit of work under the microscope, and the irregularities of the hand-work will be magnified, and the texture will appear coarse and irregular. But it is in this very irregularity in minute detail that the subtle touch of nature is apparent. Lace, in this respect, has something of the inscrutable variety of foliage. A whole is composed of an infinite number of units, which closely resemble one another, but which do not exactly resemble one another. And these units are grouped in minor and again in larger and more comprehensive groups as we ascend to the unity of the whole. Make each unit a *facsimile* of the other, and each primary and

each succeeding group of units also *fac-simile* copies of one another, and you have a regular piece of mechanical work, from which the charm and life of the product of the needle, showing the action of the human mind, are altogether absent.

The architect who has to deal with brick has a problem of this kind to solve. It may, indeed, be said that the brick manufacture has so deteriorated in this country since the removal of the duty that no two bricks exactly resemble one another. We fear that there is too much truth in that remark. But the fact does not come in to the aid of the architect. A wall built of bad bricks is not so pleasing to the eye as a wall built of good bricks. And the reason we take to be, that the eye instinctively perceives not only the artificial character of the brick, but the fact that it is intended to have a rectangular form. Any departure from exact regularity in sides or in angles is therefore as displeasing to the eye as would be the opposite case of the exact resemblance of every artificial leaf of an iron tree. It is not by a degradation of the visible excellence of the materials, but by a masterly grouping of units in successively increasing groups, that the architect will effect that which, in evidently human work, corresponds to the normal order of nature in vegetable growth.

But if we take small materials, such as flints, as to which we are aware, whether by instinct or by that experience which has become almost a second instinct, that regularity of form is not normal, the case is changed. A wall built of flints, in which the joints follow every conceivable irregularity of line, may not be as admirable as one of those plane, massive brick walls in which the purpoil joints are as exact as the beds, which we have almost (if not altogether) lost the power of now erecting in this country. But it is in every respect better than the best work that can be built from contorted and misshapen bricks.

In either case, however, that unity which would result from a plain, unrelieved mass of brickwork or rubble-work, would be a unity of disgust. Build a vast, unrelieved, unshadowed wall of any of these materials, and every one will pay it the same tribute. The universal comment will be, "How ugly!" It may be the case that, as in some of those grand chants of Tallis, in which the monotone is varied by only one or two modulations (as in the case of his chant for the Creed of St. Athanasius), the breaks required are few. But they must be distinct, appropriate, and governed by that subtle law of proportion the basis of which it is so difficult to master. There is, or was, some thirty years ago, a wall of this sort in Gray's-inn-lane. It had been, if we are not mistaken, the work of a military engineer. It was a plain brick wall, in which beds and joints were defined with mathematical exactitude. A plinth, a string-course, and a coping were the only lines of architectural accidentation. The wall was thus perfectly simple, but the proportion was so just, and the workmanship so excellent, that it was impossible to pass the spot, even in a daily walk, without a gratified glance. "What a fine wall!" must have been on the lips, or in the mind, of three by-passers out of four,—supposing, at least, the four to look at it all, and to know what a wall ought to be.

We could point out in another place a simple garden-wall, made of the rough stone so much used by the builder in the neighbourhood of Guildford and of Godalming, to which something of the same sort of praise applies. Owing to the rough character of the stone, no attempt is made at a purpoil joint. But the beds are accurately kept. The regularity of the courses is maintained throughout, in gradually diminishing thicknesses; and a simple brick plinth course, and a brick coping in three receding courses, have a harmony and justness of proportion such as to make it worth the while of any judge and lover of good building to go a little out of his way in order to see what may be made of a material not in itself promising, and frequently so handled as to be anything but agreeable to the eye. The charm of excellent handiwork is more fully illustrated by this wall than by any instance that we can easily cite. For the structure is far from faultless. No weep-holes have been left,—an omission which always menaces the stability of a wall that has in any way to do the duty of a retaining-wall. Again, the whole face or outer surface is flush, while a slight projection of the coping, and a recess above the plinth course, would have added much to the architectural effect. That the excellence of the wall is due, to a considerable extent, to the especial skill of the builder, rather than to the design of the architect, is shown by the fact that a prolongation of the same work, executed by another hand (after the death, we believe, of the builder of the first portion) is so poor in its execution as to detract from the general character of the enclosure.

It would be wrong, however, to say that the effect produced by a well-proportioned piece of work is due only to the excellence of the workmanship. We might as well assert that the effect of the simple chants referred to is exclusively due to the sweetness of the sound of the organ-pipe. Of the value of good work, indeed, it is hard to speak too highly. What is good is good in many ways, and it is impossible to tell where any faithful work, or any excellence, may display an unexpected advantage. But it is quite clear that if equal excellence of work had been applied to a wall surface of equal size, without any relief of plinth, of string-course, or of coping, the effect would not have been pleasing to the educated eye. "What a pity to throw away such good work on such a hideous blank," would be the comment most likely to be provoked from the judges of architectural excellence.

It is probable that the sense of fitness, in the proportion of architectural details, is closely connected with the love of order in the human mind, or rather, with the necessity that exists, in order to grasp any subject, for a classification, of some sort, of its details. To learn a dictionary by heart is not a feasible mode of acquiring a language. We must study its structure as well as acquire its vocabulary. And thus, in regarding the practice of the architect, we require certain subordinated stages of grouping, by means of which the observer, while cognisant of the whole, may gradually proceed to the appreciation of the parts. "What a noble edifice," should be the exclamation at first sight; "what exquisite proportion," should be the comment on nearer approach; and "what fine stone," or "what admirable brickwork," should be reserved for the final survey.

In the due proportion of unit to group, and of group or feature to structure, lies one of the most subtle causes of the effect of architectural excellence. That excellence, no doubt, is manifold. It is not the case that every building should possess every excellence. On the contrary, the true merit of a building may be held mainly to depend on the grasp taken by the architect of the true key-note that should be struck, and on the subordination of the other requisites of excellence to the main requisite. Thus, in a quay wall, or a retaining wall, the main structural requisite is strength. Such a treatment, therefore, as conveys to the mind the idea of solid, massive, weight, and of unity of structure, is as proper in an artistic as it is in an engineering view of the case. Any attempt to introduce the opposite qualifications of lightness or grace would be misplaced. But, on the other hand, if we are dealing with a lofty spire, a tapering pinnacle, or an airy arch, the idea of strength must be made subservient to that of lightness or of elegance. The two opposite qualities have their several departments in construction. The master is he who knows where each is chiefly required, and by what means each is most clearly to be indicated.

These considerations have, perhaps, their first distinct application to the property of magnitude, or apparent size; which is closely connected with, though far from being identical with, that of apparent strength.

Solidity of structure, which is one of the main elements of apparent strength, is probably associated in the mind with magnitude of the structural unit. Thus the remains of Avebury and of Stonehenge impress us with an idea of durability, of solidity, and of grandeur,—chiefly from the enormous size of the stones. A single mighty block is in itself an imposing object. A group of such blocks is still more so. And the more thoroughly the blocks display the signs of perfect mastery by the builder, the more profoundly do they impress the mind. Thus (as far as our own experience and taste may be relied on as indications of what we suppose to be generally felt), the massive, rectangular, well-wrought courses of the Haram wall at Jerusalem impress the mind with a greater sense of size and solidity, than do the blocks of Cyclopean walls, in which the stone has not been compelled by the magic of man's power to lie on even beds, and to display perpendicular joints.

In Italian architecture, and in some of the best examples of Classical or Italian work in this country, the existence of this consideration in the mind of the architect is evinced by the rustication of the lower courses. Ponderous blocks of stone are supposed to be defined by this use of the chisel and of the pick; and this treatment of the basement, regarded for the present by itself, has a justification for that reason.

But here again comes in the question of subordinate proportion. A wall is to have, let us say, a certain height. That being laid down as a principle, the next question is, what treatment, for that height, is the best suited for the materials at the command of the architect? If the height is very great, say from 60 ft. to 100 ft. or upwards, and if large blocks of stone are attainable, massive, regular courses will be the most desirable, from the artistic point of view; and, indeed, from any point of view, if means allow. But if the size of the building be small, the use of massive stones will be objectionable. Structurally they may be as desirable as in the former case. Artistically regarded they will be found to dwarf the building. When the observer approaches near enough to have his eye struck by the bed joints of the stone, he will not stop to count the number of courses. But instinctively he will form some impression of that number. And if his eye tells him that they are few,—unless there be some scale alongside to tell him that also they are very thick,—he will come to the instinctive conclusion that the building is low.

A very admirable illustration of the law to which we are referring may be found in a comparison of the elevations of the two well-known noble bridges,—that over the river Dee at Chester, erected from the designs of Mr. Harrison, in 1834, and that over the Dora Riparia at Turin, erected by the Chevalier Mosca, of which the date is not given in the account drawn up by Mr. Albano, and published in the first volume of the Transactions of the Institution of Civil Engineers, in 1842. The span of the former bridge is 200 ft., that of the latter 148 ft.

The Dee Bridge has an arch defined by a common architrave moulding, and in which the voussoirs are not marked. The spandrels are panelled, and the abutments recessed with niches. This part of the structure, of which the apparent size is suggested to the eye by the natural assumption that the niches are intended to shelter each a life-size statue, is joined to the retaining-walls of the embanked approach by two semicircular arches, with marked voussoirs, and visibly indicated courses. Instead of throwing into relief the main arch, which is here characterised by a treatment like that of a cast-iron bridge, this heterogeneous juxta-position of two styles of masonry only destroys the grand unity which might have been secured to the elevation; and looks as if an iron bridge, too small for the river, had been eked out by a mason. "The essential parts," says Mr. Fergusson, "in the construction of a bridge, are the voussoirs of the arch. If there had been fifty well-defined arch stones, the bridge would have looked infinitely larger than it now appears. With one hundred, it would have looked larger still,—but, if too numerous, there is a danger of the structure losing that megalithic character which is almost as essential as actual dimensions for greatness of effect. The true architect is the man who can weigh these various conditions one against the other, and strike a judicious balance between the different elements at his command."

The Dora Riparia Bridge affords a signally confirmatory illustration of the justice of this counsel. With fifty voussoirs, the visible unit of structure of the Chester Bridge would have been a 4-ft. course, or thereabouts; with 100 voussoirs, a 2-ft. course; still, a very solid style of work. In the Dora Bridge there are ninety-three voussoirs, giving a unit measurement of about 1 ft. 8 in. of thickness of course. But the keystone is nearly 5 ft. deep, and the observance of the intersection of the mean curve of the extrados of the arch with the courses of the bridge divides the voussoirs into six groups on each side; thus affording a series of rests for the eye in passing from the visible unit of the voussoir and of the course, to the simple grandeur of the opening.

Another scale is afforded to the eye by the insertion of blocking-pieces under the cornice. These, which are sixty-seven in number between the abutments, give distances of about 2 ft. 3 in. from centre to centre; and thus afford a second and not very difficult modulus for the instinctive calculation by the eye of the span and

consequent size of the bridge. The abutments form quarter circles on plan, curving round from the line of the springing to a short retaining wall on each side, parallel to the river. No other niches, recesses, or projections mar the simple grandeur of the structure. The introduction of what the French call *cornes de vache*, and the Italians *ugnature*, which consist in a bevelling off the under-side of the arch, commencing at nothing at the key, and gradually increasing to the abutment, is the only other accidentation, except the cornice and coping, of this noble work. The *ugnature* make the extrados of the face of the arch, when it meets at the abutments, cut the line of the perpendicular at the third course above the springing of the main arch, and the bevel is such as to reach the springing course in a distance from the face equal to the depth of the keystone. A personal and vivid remembrance of this noble bridge, under which we remember on one occasion seeking shelter from one of those sudden and violent Alpine storms that temper the intense heat of the Turin summer, fully bears out the statement of M. Albano that "the style of the architecture and the nature of the materials give to this bridge a noble and simple grandeur, and a character that is unique."

ARCHITECTS' REMUNERATIONS: A FOREIGN VIEW.

WE alluded, in some comments on the leading French architectural journal, to a series of articles therein contained, under the heading "Les Honoraires des Architectes." These articles, by M. Ravon, contain a good many reflections that are of general import in regard to what may be termed the philosophy of architects' charges, and give also some information as to the method of treating the subject which has been suggested by different bodies of provincial architects on the Continent. It may be of interest to compare these views with the opinions and practice of our own country, and to note what there is in the way of general suggestion which may be of any value to English practitioners in regard to their business relations with their clients.

The special reason given for reconsidering the subject at present is put by the French architect in rather an effective manner. Not only has the cost of living risen greatly, while the architect's fees have remained stationary, but new elements of difficulty and responsibility have been introduced into the architect's work through the double influence of the increased complication of appliances demanded by civilisation in modern houses, and the increased demand for economy of structure and of material. In regard to the former point, a tariff of professional charges, fixed at a percentage on the cost of the building, would, of course, rise with the rise of prices in the ordinary manner; but, as M. Ravon complains that the remuneration of architects is still estimated according to the scheme formulated by the "Conseil des bâtiments civils du 12 Pluviose, an VIII.," that is to say, about eighty years since, we presume that there has been in the French tariff a certain element of fixity which has prevented its development in consistency with other advances in prices. The other reasons, however, for reconsidering the scale of remuneration are what will occur in all countries where advancing refinement and luxury introduce new details into the dwelling; and though we have of late years reconsidered and somewhat reformulated our tariff in this country (at least, the Institute of Architects has done so), we do not know that the effect of the new method of building, in increasing the architect's labours and responsibilities, has been specially remarked upon. M. Ravon says, "it is important to consider that construction has undergone profound modifications, by reason of the new materials introduced, and, above all, by the actual requirements of the habitation and the numerous exigencies of speculation. Formerly people built without looking, as they do now, to a parsimonious economy. This is sufficiently illustrated in the demolitions that are made in different parts of the capital; the timber found in the old houses is generally of scantling far above what is sufficient; the ironwork is introduced in a prodigal manner; the walls are considerably thicker than those of the present day; and the buildings were covered with tiles or slates laid on high roofs with a very rapid fall to keep the rain from penetrating. Under these circumstances, the responsibility of the architect was evidently very small—almost nothing, one may say." But the responsibility of the architect has been much modified in the present day; all kinds of new materials have been introduced, and the architect is expected to exercise great care in the choice of them; gas and water, and elaborate sanitary apparatus, are on all stories of the house; and demands for light and space in business premises compel the architect to provide large areas not interfered with by points of support; he must carry great weights upon few and small points, and must find means of ensuring stability "always economically, that is understood as a condition absolute." The next sentence applies more to France than to England: "For all this, if the building fails in any way, it is the fault of the architect, and we know in how rigorous a fashion the courts ratify the demands which are made upon him in any such a case in which he is, or appears to be, to blame." The responsibility placed upon architects in France, and frankly accepted by many of them, in regard to such cases of failure, is of a much more serious and practical nature than is usual in this country; in fact, it appears to us that in France architects are saddled in such cases with responsibilities which, in this country, would rather be fixed on the contractors; so it is not surprising that they should think it a serious object to have their remuneration put on a liberal footing.

Nearly the whole of the difficulty which has been felt again and again in dealing systematically with the subject of architects' charges arises from the fact that it is a mixed profession, partly a business, partly an art: it contains elements that are easily appraised by a tariff, and others the real value of which can no more be stated in this way than the real value of a picture or a poem. In France it seems there have been (perhaps are still) three camps among the members of the profession who interest themselves about architects' charges: (1) those who think all work should and may be tariffed, of whatever kind it be; (2) those who think that each architect should be left perfectly free to treat with his client as he pleases; (3) those who think a tariff very necessary and suitable for "travaux *ordinaires*," but ask for complete liberty for the architect to treat as he pleases when it is a question of "travaux *extraordinaires*, c'est à dire de *travaux d'art*."

This last intermediate view is a good deal the same as that which has been adopted in the Institute scale of charges for English architects. Of course the main difficulty of such a principle is to find the means of distinguishing between "travaux ordinaires" and "travaux extraordinaires" on a principle which will be readily appreciated and will furnish no ground for disputes and differences between architects and clients as to the nature of the work. This difficulty hardly disappears when the attempt is made to reduce to a tariff all the works of every class which can be undertaken under the direction of an architect. The attempt to do this, however, seems to have been made by the architects of Marseilles in a "projet de tarif," the complexity of which, as our author observes with reason, becomes a decided weapon in the hands of those who object to all absolute regulation of architectural charges. This system, which emanated from the architectural section of the "Société Scientifique et Industrielle" of Marseilles, recognises no less than five classes of work, in which it resembles the German system, upon which it seems to have been partly founded. The main principles of this Marseilles tariff are thus summed up:—

1st. The charges are fixed at so much per cent. on the cost of the work, of whatever kind it be.

2. The constructions are divided into classes according to the greater or less labour which they impose on the architect, and these classes are again divided into "series" according to the amount of the expenditure.

3. In the same series, that is, in works coming within the same limits of expenditure, the charge is higher for works of a superior class.

4. In constructions of the same class, or of the same artistic value, the scale of charges is proportionally higher for works of less expenditure, that is to say, of an inferior "series."

5. The total remuneration of the architect is obtained from the sum of the charges on the different classes of work, such as preliminary sketches, working drawings, details, estimating, and superintendence.

The charges upon the various classes and series of work vary from 2½ to nearly 17½ per cent. At this rate it would be almost necessary, in a large practice, to engage a clerk for the special object of computing charges and making up the accounts against the various clients; and although it may be said that such a system gives great opportunity for exactitude in knowing precisely how much to charge, from the architect's point of view, it is pretty obvious that it would be a system on which it would be exceedingly difficult for the client to realise beforehand what the professional assistance of his architect would cost him, as he at least could not be expected to be acquainted with all these mysteries of "classes" and "series," which would be trouble enough to the architect himself. But it is one of the most important points in any system of professional charges that the client should be able, without much difficulty, to know what he will have to pay, within pretty near limits. The "Société Académique d'Architecture de Lyon" opposed this Marseillese tariff on the ground of its complexity, urging that any system of charges for general acceptance should have a base wide enough to lend itself to all solutions and comprehend all cases; any system not so based was dangerous to architects in giving room for continual conflicts between them and their clients, in which they (the architects) would probably suffer most. They, the Lyonnese architects, therefore proposed a system of five per cent. on all works of which the expense was above 10,000 francs, except works of art and those connected with underpinning (*reprise en sous-œuvre*); to remunerate these latter at 10 per cent. on the outlay; and to leave the architect free to treat with his client for an additional charge or percentage for either of these classes of work when the expenditure on labour and materials did not reach 10,000 francs. This is a much simpler, and, on the whole, not a bad system. English readers will notice the peculiarity, as it will appear in this country, of charging works of underpinning on the same level as works of art; an arrangement which, no doubt, is referable partly to the more direct and practical responsibility imposed upon French architects in regard to work of that kind. And after all, is not this a reasonable view of the matter? No work can be more practically important than the whole class of work which would come under this head; and by no class of work (especially when, as is so often the case, it is concerned partly with the safety of an adjoining property belonging to another owner) is the architect placed under a heavier responsibility if his responsibility is to be a reality, and not merely nominal, for upon him in this case may depend not only the safety of his client's and of the neighbour's property, but the avoidance of the chance of a lawsuit and heavy damages against his client. We cannot but commend to the notice of English architects this importance attached by the Lyonnese scheme to underpinning works, and the deductions to be drawn therefrom.

Occupying an intermediate place between these two tariffs comes that of the "Société Suisse des Ingénieurs et Architectes Génevois," which divides buildings into two classes, *d'ordre supérieur* and *d'ordre inférieur*; but in what way these two orders are distinguished we do not precisely make out. There is, however, a division of the proportions of charges for various parts of the work, so that if the total charge were 100 francs, 20 francs would go for plans and elevations,—working drawings, in fact,—15 francs for estimating (*devis*), 20 francs for detail drawings, 25 francs for superintendence, and 20 francs for examining and passing accounts (*vérification des mémoires*). The use of thus subdividing the charges we can hardly see, unless it is to be supposed that the client wishes to have plenty of convenience for introducing a new architect at one or another point in the proceedings, and paying off the original architect for the proportion of the work which he has done; at any rate, the knowledge of the existence of such a recognised scale would be very likely to suggest this to a troublesome or fidgety client, and it seems much better for the profession that the charge for the work should be massed as far as possible in one sum.

None of these systems are satisfactory to the critic of the *Revue Générale*, who says very forcibly that for any such tariff to become law, to have the force of law, and to be accepted as such in the courts, it is absolutely necessary that it should be perfectly comprehensible by both the parties

concerned in it. Again, if it is not to give rise to disputes, it must deal in no terms which may be diversely interpreted by the two parties. If, as in all these schemes, there is to be a large distinction between payment for *travaux ordinaires* and *travaux d'art*, shall we not, he says, frequently see the proprietor maintaining, rightly or wrongly, that such and such works are "ordinary," and the architect maintaining that they are "art"? And no tribunal can settle that question upon any principle of law: it can only be by an arbitrary judgment.

The scheme which M. Ravon proposes as superior to any of these is one which recognises two classes of structures, but by a classification about which no mistake or dispute is possible, as he divides them into new buildings of whatever kind, and works of alteration, repair, addition, &c., to buildings already in existence. As he says truly, there can be no question as to the facts here; and as it is generally admitted that alterations cost more trouble in proportion to the expenditure than new buildings, he proposes 6 per cent. for all new works, and 8 per cent. for works of alteration and addition. The substitution of 6 per cent. for the 5 per cent. of the existing system, as recognised by the French Government, is intended to cover the expense of estimating ("*devis*"), which is not included in the existing 5 per cent., but for which it is legally recognised that another 1 per cent. should be charged; but this, it appears, leads to frequent misunderstandings with clients, who expect the *rédaction des devis* to be comprised in the 5 per cent., and complain of the extra 1 per cent. The *rédaction des devis*, we presume, includes something more than a mere general estimate of probable cost; at all events, it must be an estimate in sufficient detail to be exact, or it would not be worth paying for. On any new buildings the total cost of which is under 10,000 francs there is to be an additional 2 per cent. in the architect's charges; that is to say, we presume that the charge is to be 8 per cent. instead of 6 per per cent., though the writer's wording on this point is a little obscure. On additions and alterations in the same way, the charge of 8 per cent. is to be raised to 10 per cent. when the cost is below 10,000 francs, with the reservation in either case that works approaching near to the limit of 10,000 francs, are never to be charged so that the remuneration for them mounts to a higher sum than the ordinary percentage on the 10,000 francs would amount to. As to the "*travaux d'art*," the safest plan, in M. Ravon's opinion, is to leave them out of the recognised tariff altogether. The architect knows better than any one else what kind of work the building he is going to carry out will exact from him; and it is for him to say beforehand to his client if any portions of the work are of such a nature as to come, in his opinion, beyond the scope of ordinary architect's work, and amount to artistic design of a high value, which must be paid for according to its worth or according to what the designer asks for it, just as a picture by Troyon or a statue by Carpeaux. And this is really the only way in which this question of artistic work can be dealt with; and is, it will be seen, the same way in which our Institute scale of charges leaves it. What is essential, however, is that the architect should let his client understand, at the earliest possible point in their relationship, what there is in the proposed work which must be specially paid for, and what he means to charge for it.

This scheme resembles very much, it will be seen, the English Institute scheme of charges; but it has one important superiority,—it is more definite in regard to the higher charge to be made for works which involve much trouble in proportion to the expenditure. For works under 500*l*. the Institute scheme does say distinctly that five per cent. is not remunerative, and that they should be charged by time or by an ascending scale up to 10 per cent. for work under 100*l*. But, in regard to alterations and additions, it merely provides that a special charge "may be made" on account of the extra trouble and difficulty involved. This leaves the architect in uncertainty as to when and to what extent he should make an extra charge, and gives some ground to the client for disputing it, and denying the existence of any extra trouble. As, however, it is certain that, in such works, the trouble is almost invariably greater in relation to the cost than in new works, and as they are usually in other indirect ways less valuable to the architect, giving him generally much annoyance and little credit or satisfaction, the positively formulated extra charge of the French architect we are quoting seems to us to meet the case much better than the more vague provision of the Institute scale.

There are one or two special points raised in the further discussion of the subject which are of interest as illustrating Continental practice, if not of more direct significance to us. We are reminded in reading them that the contract system is by no means so nearly universal in France as in England. The remuneration of the architect ought to be in general, we read, charged upon the amount of the accounts (*mémoires*); and in connexion with this we have a somewhat singular point raised, whether in cases where the builder lowers his price below the market value of materials and labour, in order to secure the immediate execution of work, rather than have his hands and plant left idle, the architect is to be remunerated according to the actual prices charged by the builder, or according to the real value of the work. The conclusion of M. Ravon is, that the architect is bound to claim a per-centage on the real value of the work, *à fortiori* in this case, because a builder who is ostensibly working at a loss will require all the more looking after, in order to guard against the results of his natural temptation to save expense and material wherever there is a loophole for this, and the architect will, therefore, have more trouble over the affair than in the case of a builder working at an ordinary profit. This is, no doubt, morally true, but there might be some difficulty in making it work with a client. The best rule is never to put architect and builder in so unfair a position. The Institute schedule provides indirectly, we may observe, against cases of this kind by its sentence that the commission of the architect is reckoned upon the total cost of the work, "valued as if executed by a builder, and of new materials," the real force of which is that the commission is to be on the market value of the work. In the case of estimates submitted in competition, where the lowest tender is accepted, it sometimes happens, again, that this is considerably below the market value for good work, owing to the fact that some one of the contractors does not want work to stop in his shops, and therefore tenders at a price that may ensure his selection. In this case M. Ravon thinks the architect's commission should be ruled by the amount of the tender, as the very object of the contract system is to get low prices, and it is a system much less troublesome to the architect than that of measuring up, and therefore he must take its drawbacks with its advantages. This, perhaps, would hardly sufficiently console the unfortunate architect for the result to his pocket of some of the tenders which figure as "accepted" in lists which are furnished to us for publication, where we may read, "Jones, 13,000*l*.," at the top of the list, and "Brown, 6,900*l*. (accepted)," at the bottom, the architect having into the bargain all the trouble and responsibility of seeing that all the little channels are carefully guarded by which the adventurous Brown hopes to recoup himself. The moral, however, is, not to receive estimates on terms that leave such a result possible.

On another point, our author suggests that the employment of old materials, the property of the client, ought to be included in the expenditure on which the architect's commission is based; that is, they must be valued, and their estimated price added. This is another case which is provided for, we may suppose, in the paragraph of the Institute schedule alluded to just now, and it is no doubt nothing more than strict fairness to the architect; yet we cannot help thinking there is often difficulty in enforcing it or making a client understand it, and that very often it is not claimed for fear of a misunderstanding being the result. M. Ravon adds, indeed, that "in strict justice the employment of old materials ought to be the ground for an extra charge, since they are very often the cause of difficulties which would not present themselves in the case of new materials made expressly for their situations": which also is perfectly true, but we hardly should say that it was very advisable to endeavour to act upon it.

This question of old materials really seems to belong to some extent to another which is discussed in the concluding part of the essay, viz., whether the proprietor can take out of the hands of the architect the direction of some parts of the decoration or other portion of the work, with the view of saving some part of the architect's commission by reducing the amount upon which it is to be reckoned. It is, of course, conceded that such a proceeding would be very shabby; but would it be legally, or morally, justifiable? M. Ravon thinks not, because the percentage by which the architect is paid is on the amount of the whole works without distinction, and it is only so that it is remunerative. Some parts of the work are over-remunerative at that rate, some are hardly remunerative at all; the percentage is a charge on the building *en masse* simply as an easy, general way of appraisement. But one particular argument which is used by the writer in the *Revue* is worth mention. "Suppose," he says, "an architect declared responsible for the falling down of a building, obliged to replace the building and supply decorations similar to those which existed in the one which has perished by his fault" (these decorations having been taken out of his hands by the employer through motives of economy); "works of decoration which he has not superintended in the building destroyed, and for which, consequently, he has received no payment, but for which he is, nevertheless, recognised as responsible, their restoration being rendered necessary by the ruin of the building which has fallen by his fault; that would certainly be strange." In other words, responsibility for the whole involves remuneration for the whole, and as the responsibility in such a case as that described cannot be divided, no more can the surveillance and the remuneration for it be divided. But what especially strikes us in this passage is the illustration which it affords of the high degree of responsibility fastened upon and accepted as a matter of course by the French architect. And we cannot but honour such a high feeling of personal responsibility on the part of the profession as this fact gives evidence of.

In concluding our remarks, we may just observe that the absolute property of the architect in his own drawings is affirmed without a shadow of qualification or hesitation by our French critic, and it is affirmed with equal certainty and decision in the scheme of charges put forth by the Neufchâtel section of the Swiss Society of Engineers and Architects, whose tariff in many ways resembles M. Ravon's and confirms his views; and who assert that "dans toute construction exécutée les plans et détails restent *la propriété absolue de l'architecte*; pendant la construction, il en est fourni des doubles au client, à l'usage des entrepreneurs, mais ils ne peuvent *être employés que pour les travaux en vue desquels ils ont élaborés*."

We draw attention to these strong and decided expressions on the point, in the hope that they may be for edification to some of those outside the profession (legal gentlemen especially) who are always exclaiming against this claim of the architect to property in his own drawings, and representing it as a claim not only unsustainable but altogether strange and unheard of; whereas it is the practice of the profession, as far as we can ascertain, in all civilised Europe. The framers of the Institute schedule of charges rather fell short of their duty to the profession in not affirming this point a little more strongly and unconditionally; but they probably feared to mislead architects as to their legal position.

One point in the last-quoted tariff of the Neufchâtel architects is an unusual, but we think a wholesome, provision, namely, that the architect cannot claim any augmentation of his charges in consequence of increase of cost over the original estimate as the work proceeds, unless this is the result of changes and enlargements unforeseen, and now demanded or consented to by the client, or by an increase in the price of materials and workmanship of the locality since the making out of the estimate. This is well intended, and we can hardly understand why M. Ravon calls it a "singularly rigorous condition"; it may be doubted whether it even goes far enough, for, after all, why should the architect receive increased remuneration because the price of the materials has risen since estimating? It is perhaps simpler that he should do so, as it is making one unvarying rule (percentage on real cost of the work); but after all it in no way entails fresh labour on him. And it is very desirable that in every little possible way people should be disabused of the idea that an architect is always trying to make their building cost more in order to increase his own gains,—the one real objection that can be urged to the percentage system, but one which probably we shall hardly be able to see our way out of.

THE MONUMENTAL HISTORY OF ROME AND THE MIDDLE AGES.

AT this season of the year, in these weeks of general recess and vacation, when the archæological societies of Europe are busily throwing fresh gleams of light on the obscurity of the past, and the silent study of the last year has been brought under the eyes of the interested public, we are more willing to listen to the tales of bygone times than perhaps at any other period of the busy twelvemonth that modern civilisation has created for us. And very readily do the archæologists seize this moment when the more thoughtless of us are not so prone to rigidly inquire into the utility of a science which within a few generations has gifted the world with such extraordinary stores of beauty and information, and the researches of whose followers have successfully resulted in making archæology the practical illustrator of the historical and literary information we possess concerning antiquity, enabling us to compare the works of the artists and conceptions of the men of letters of the past, annotated each by the other.

It is at this period, therefore, of archæological agitation that M. Geoffroy, the well-known antiquarian scholar, has simultaneously, in a recent communication to the French Academy of Moral and Political Sciences, and in a more detailed paper contributed to the current number of the *Revue des Deux Mondes*, thrown much light on the condition of antique Rome at that interesting period of its history which followed the epoch of its greatest glory.

When and how, asks M. Geoffroy, was accomplished the great overthrow of the city of the Cæsars and the Popes, and what epoch was in this respect the most culpable? The great monuments of ancient Rome which existed during the Middle Ages dated almost all from the first Empire, having been erected or repaired at that period. There are few which were preserved as the Republic had left them, like the Pantheon. There are few, again, which were not enlarged or restored, rather than destroyed, for they were protected by the Roman administration. The republican ædile had charge of them, and a series of legislative texts dating from the imperial period shows the precautions taken to avoid the aspect of Rome being injured by ruins.

But Rome had to traverse many cruel phases, even at the moment of its greatest splendour. Black bands gave themselves up to strange speculations, purchasing properties, selling the sculptures, the marbles, and the paintings. The excessive luxury of the rich was the cause of not a few demolitions. Sallust converted into a garden a large portion of the Quirinal; Mæcenas erected his sumptuous villa on the Esquiline. When Constantine conceived the project of transferring eastwards the capital of the Empire, he called in the artists and most skilful workmen, and bore away from Rome a great part of the embellishments for his new city of Constantinople.

Invasion continued the work of destruction. In 410 Alaric accords three days of pillage to his soldiers, who set fire to the gardens of Sallust, sack the city, and carry off the sacred vases of Solomon and the Roman spoils from Jerusalem. Forty-five years later the Vandals of Genseric sojourn in Rome fourteen days: they sack the Temple of the Cæsars, on the Palatine; the Temple of Jupiter, on the Capitol; bear off the statues, and ruin the roof to seize the sheets of gilded lead. In 472 Rome is sacked; and after that, in chronological order, comes the siege of the Goths, who cut the fourteen aqueducts which brought to Rome its noble supply of water. To combat the enemy, the soldiers of Belisarius, shut up in the tomb of Hadrian, break the statues and convert their remains into projectiles.

M. Geoffroy considers that Christianity favoured the preservation of the antiquities, and cites as an example the Temple of Minerva, which has become the cathedral, and the columns of which have been maintained, owing alone to the more modern masonry. During the Middle Ages, the antique monuments were further ruined. They became fortresses, and risked either the strangest changes of form or destruction under assault; they ran the risk of being mutilated for new buildings, for the Mediæval builders seemed capable of making use only of antique materials. The Coliseum was transformed into a quarry and a lime-kiln. Finally, the old monuments had further to stand the effects of the earthquakes of 1348 and 1349, the inundations of 792 and 1230, and repeated fires.

Such is a *resumé* of M. Geoffroy's remarks to the Academy relative to a map of Rome by Bafalini, signed and dated 1502, an interesting and rare map recently republished by the Italian Government, and especially useful in offering a plan of the monuments of Rome previously to the alterations of the second Renaissance. The communication to the *Revue des Deux Mondes* is a review of two works, the *Piante iconografiche e prospettiche di Roma*, by the eminent Roman archæologist Signor Rossi, and showing the plans of the old city previously to the sixteenth century; the second work, "The Arts at the Court of the Popes during the Fifteenth and Sixteenth Centuries," by M. Paul Müntz, the librarian of the national Ecole des Beaux Arts.

Another important work has been added by Signor Rossi to his valuable series, the *Roma Sotteranea*; his periodical Bulletin, his collection of Christian Inscriptions, and his great work at present in course of publication on the Christian Mosaics of the Churches of Rome before the fifteenth century,* a veritable encyclopædia of Roman archæology. But Signor Rossi has not confined his labours to these learned works; his indefatigable energy is displayed in numerous papers contributed to the learned societies of Europe, and in a series of lectures, which, under the patronage of the reigning pope, are held in the Palazzo Spada, and where Signor Rossi displays the enthusiasm of the true archæologist. On the recent celebration of the fiftieth annual meeting of the German Archæological Society at Rome, Signor Rossi prepared a study on the figured plans of Rome previously to the sixteenth century, and it is this study enlarged that now re-appears, a valuable aid to the student of the monumental history of Rome.

On this interesting ground Sig. Rossi has been working in the same direction as M. Müntz, who has published the result of a learned search into the Roman archives on the art of the Papal court during the fifteenth and sixteenth centuries, a work which, in method, bears some slight resemblance to the Comte de Labarde's esteemed study on the Dukes of Burgundy or the Athens of the fifteenth, sixteenth, and seventeenth centuries; the same use of that ever valuable source of information, the registers of expenses, has been made, and the same patience has been shown in the painful deciphering of the carefully-kept accounts of the Papal court, found scattered in the various libraries of Rome, Naples, Florence, and even Paris.

At the head of each pontificate a preliminary notice sums up the results obtained by the author, while a series of paragraphs studies, turn by turn, each of the great works of Rome, the walls and fortifications, the gates, the bridges, the streets and *piazze*, and the antique monuments. References in all cases are copiously supplied, and facility of reference assisted.

Both of these works throw a new light on what may be called the monumental history of Rome, a history contemporaneous with all the stirring events of which the Eternal City was turn by turn the scene.

We have already pointed out how the buildings of the Middle Ages, most of which belonged to the period of the first empire, were protected, even if their appearance was changed, by the care of the Government. Libanius cites the existence of an inspector of the public bronzes; but though Rome was thus more or less preserved from destruction, towards the end of the Empire the Eternal City commenced to be abandoned and a prey to desecration, and the increasing luxury of the wealthy served not a little to aid the work of destruction.

The treasures of Rome were carried off to Byzantium, and among them Phidias's incomparable Jupiter Olympus; fire further helped, and more than one beautiful work of art ravished from Greece crossed again the mountains to embellish the capital of the Greek empire.

The decadence and abandonment commenced by Greek emperors was completed by the barbarians, to whom, however, is attributed, perhaps, a too-wanton spirit of desecration. We have only to read the curious journal of excavations which Flaminio Vacca has left us, to see in what superstitious horror the Goths were held in the sixteenth century; there existed no crime but what was charged to their memory, they alone had committed all the ravages on the antique monuments; they seem, in fact, to have held much the same unenviable position still attributed by the thoughtless in England to the ubiquitous Cromwell and his sturdy Roundheads. From all accounts of the ruthlessness of the barbarians, it is evident that in the sixteenth century the name of Goth was, for the Romans, a synonym for brigand and plunderer, a reputation more commonly fathered in the present day on their contemporaries the Vandals.

The cruellest blow of the barbarians was the destruction of the fourteen superb aqueducts, depriving Rome, not alone of its boasted supply of water, but threatening it with famine, for the corn-mills were situated on the slopes of the Janiculum, opposite the now doomed Ponte Sisto of the present day; but Belisarius obviated the difficulty by constructing a number of floating mills (the *aquimoli* of the Middle Ages, still to be seen in many towns, notably in Verona). The worst result, however, of the measure taken by the Goths was, that the conduits interrupted, and, after that, ill repaired, allowed their waters to escape into the Roman Campagna, crumbling away the foundations of the ruins, and forming those marshes which, neglected for centuries, have generated the too famous *malaria*, the solitude and death that reign round the walls of Rome.

In the Tuscan maremma, the neglect of the aqueducts has led to the same result, with this strange difference, that in the midst of the antique plain of Vulci, which the torrent of the Fiora divides into two parts,—on the right bank the ancient Etruscan city, on the other its necropolis,—rises an old and dilapidated fortress which serves as a *tête de pont* to the remains of a classic aqueduct, the water conducted by which, charged with lime, has escaped through the fissures and the stones, and huge picturesque stalactites have been formed, burying everything they cover. We all know that stagnant water is the principal scourge of the unhealthy regions of the Italian peninsula, and so well did the Romans understand this that round the capital are still to be found remains of vast underground works prepared to obviate this danger.*

The injury dealt to the capital by the foundation of the Eastern Empire, and the attacks of the barbarians, cannot be said to have been carried on by the Christians. Hostile as was the antique worship to theirs, bitter as was the persecution their co-religionists had suffered in the arenas, the Christians appear to have wreaked no vengeance on the emblems of the pagan worship. It must be remarked that the rigour of the emperors partook more of cruel accesses of rage than continued persecution, and so it was that when the independence of the Christians came at length to be acknowledged, the emperors, even after renouncing paganism, respected the monuments of antiquity. Sig. Rossi has abundantly proved this interesting fact, often misrepresented by history. The principal sanctuaries, it is true, were closed, the lands of the pagan priests were confiscated, but the statues of their divinities were spared, and allowed to remain to ornament the city, a fact shown by the discovery of numerous fifth and sixth century inscriptions relating how such and such a prefect has excavated some statue "in order that it might serve to decorate the town." The chief violence exercised against the monuments of the past pagan worship was carried out in Egypt, in Africa, in the East, or in the country,—in every case away from Rome. The Christians of the capital wisely understood that the monuments of pagan Rome made part and parcel of a glory which could not be denied, since it had prepared the peoples of the world, in accordance with the designs of Providence, for the reception of the Gospel; the priests skilfully substituted the new religion to the old, the Christian emblems were attached to the pagan monuments, the old basilicas served as the churches for the new worship, and Rome is the most interesting scene on which may be followed out the strange blending of the two civilisations.

In addition to the foundation of Constantinople, in addition to the invasion of the barbarians and the triumph of Christianity, a fourth

* Twelve large chromo-lithographed mosaics and several plates of pavement in *opus tessellatum*, falsely called *Alexandrinum*, have already appeared, together with an explanatory text in Italian and French.

* See the recent works of Sig. di Tucci and the Professore Tommasi-Crudeli,—"Dell' antico e presente stato della Campagna di Roma," 1878, in 12mo.; and "Della distribuzione delle acque dell' Agro-Romano" (printed for the Accademia dei Lincei, 1879).

cause of entire transformation in the monumental aspect of Rome, and incontestably the most energetic, the most irremediable, were the long duration of the feudal anarchy and the civil wars of the Middle Ages, during which Rome, often abandoned by its own pontiffs, hiding in Ravenna, exiled at Avignon, became a battle-field in which the partisans of pope and anti-pope, of Guelph and Ghibeline, fought out their separate quarrels, ruthlessly destroying alike antique traditions and antique monuments.

The last great works of the Empire had been, in the fourth century, the circus of Maxentius, the basilica and the Arch of Constantine, itself composed of sculptured stones from other buildings, the bas-reliefs, for example, having come from the Arch of Trajan in the Forum. Constantius II., by a remarkable effort, brings from Egypt the obelisk of the Piazza St. John Lateran; but these are among the last proofs of the energy of the Roman Empire. In the middle of the seventh century the Greek emperor, Constantius II., sees the gilded horses of the triumphal arch which adorned the great circus, as also the gilded tiles of the Pantheon. Leo. IV., in the ninth century, builds against the Saracens the walls of the Leonine city; but the monumental decadence of Rome is far on its road. Not only were the Romans incapable of building, but they seemed unable even to raise what had been demolished or was falling to ruin. In vain, during the Carlovingian epoch, a slight revival of the arts is noticeable, the old traditions are dying out, and we find no traces of mosaics executed in Rome between the ninth century and the commencement of the twelfth, until those of Sta. Francesca Romana and Sta. Maria del Trastevere (1130). No great works in bronze are executed, and that noble art, which had produced such marvels, exiled to Constantinople, was alone to be revived in the early years of the twelfth century. For 200 years and more we wander in the deserted Rome of the *Mirabilia*.

This little book, the popular guide of the pilgrims, and so largely used by them for four centuries, offers a perfect specimen of the general decadence, and in it, the Christian legends are found so enveloped in those of paganism, that all precise information has vanished. The beautiful tomb of Cecilia Metella takes, among other corruptions, the name of the *Capo di Bove*, from the bull's-head ornament of the marble frieze, and many other similar well-known changes might be mentioned, the Arch of Titus, the *Arco delle Sette Lampe*, from its sculptured representation of the seven-branched candlestick.

The aurora of a Renaissance is revealed in some interesting Roman works of the thirteenth century, but the stay of the popes at Avignon, from 1309 to 1377, revived the old anarchy. The recollections of the ancient grandeur of the capital of the world have scarcely remained in the minds of even the Mediæval scholars, and Dante himself alone sees Rome through the clouds of the *Mirabilia*. It is not Petrarch, the enthusiastic Hellenist,—it is the poor tribune, Rienzi, who is the first to pay serious attention to the language of the lapidary inscriptions. The solitude extends like a leprosy; the Forum and the Palatine are soon little else than fields for pasture. The inertia becomes such that on the roofs of the houses, the miserable wooden shingles,—*scandulæ*,—which Rome had used in the first five centuries of her existence, replace the tiles, and this once important industry becomes unpractised by the degenerate Romans. The houses themselves are built of such bad materials that they may be said to be rather of earth than of brick.

With the enmities and quarrels of the Middle Ages the monuments of Rome suffer still further, and Guelph and Ghibeline rival each other in their destructive zeal; the Frangipanni occupy the Arch of Constantine, that of Titus, and the Coliseum; the Caëtani, the powerful family which gave four popes to the seat of St. Peter, seize the tomb of Cecilia Metella, and the now picturesque Torre della Milizia; the Orsini the tomb of Hadrian, the theatre of Pompey, and the Campo del Fiore; the Colonna occupy the mausoleum of Augustus and the baths of Constantine, the Savelli seize the theatre of Marcellus and the Aventino. Rome bristles with watch-towers rising from its classic monuments. Assault after assault from Robert Guiscard and his Normans, the contemporaries of our William the Conqueror, and many another band of pillagers, reduces Rome to a solitude, and with the thirteenth century Senator Brancaleone destroys 140 of the feudal towers of the nobility.

A further destruction arises from the rebuilding with antique materials. Each wall contains the fragments of past magnificence, discovered from time to time. Only last year in demolishing one of the bastions which flanked the Porta del Popolo, the remains of a beautiful funerary monument were laid bare; and it will be remembered how in 1871 the architect, Signor Vespignani, in destroying the two towers of the old Porta Salaria, discovered the interesting tomb of Q. Sulpicius Maximus, the young Greek *improvisatore* who charmed Rome in the days of Domitian. These instances are but two among many others, and each moment may add to the list. As for the Coliseum, it is a familiar tale how long it served as a quarry,—a fate suffered by many other monuments; indeed, throughout Italy it is not rare to find in the lower portions of the older churches remains bearing traces of once having been Roman. The cathedrals of Pisa and Lucca are built of Roman materials, and more than one edifice in Verona is studded with Roman bas-reliefs and inscriptions.

No small cause of ruthless destruction was the further use made of the marble for the manufacture of projectiles and for the making of lime. On more than one old map may be seen the indication of the Coliseum or the Baths of Diocletian as a *petria*, and by their side is marked the *fornace* or kiln. Generations of marble-workers appear to have occupied the Arch of Septimius Severus, and during the Middle Ages one of the numerous lime-kilns of the city rose in the classic Forum. In this manner, doubtless, disappeared the beautiful Temple of Concord, of which we now alone possess a single column; even in the sixteenth and seventeenth centuries such abominable practices appear still to have been continued.

To aid the ruthless work of man came the effects of nature, and in successive earthquakes more than one building perished. The earthquake of the year 1348 destroyed a great part of the basilica of the Lateran. The following year a portion of the Coliseum fell; while repeated inundations further worked their mischief. The fifteenth century alone records eight floods; while the chronicle of the fires is no less disastrous. In the causes of decay should not be forgotten also the appropriation for projectiles of the stout iron bands that bound together the huge stones of many of the edifices, leaving those mysterious holes which have so long puzzled the archæologists.

The continual rise of the Roman soil, a fact due to the accumulation of ruin after ruin, above which the degraded inhabitants built their wretched hovels, is another of those singular effects which have reserved for the present day more than one agreeable surprise. This phenomenon is not alone observable in the valleys, but also on the heights; while the famous Tarpeian Rock has lost, since antique times, portions of its summit, and the Palatine, with the other hills, has lost much of its original height, every visitor to the Eternal City must have noticed that on the Esquiline the Baths of Titus are built above the Golden House of Nero. On the Quirinal, the Baths of Constantine were only recently discovered in digging between the Rospigliosi and the Colonna gardens. On the Cœlian, near the Church of Saints John and Paul, the excavations in the time of Piranesi showed that the filling up of the deposit was no less than 60 Roman feet.

In the valleys this work of slow burial has naturally been more marked. The Pantheon occupies one end of its *piazza*, the rest of which is evidently built above lower foundations. The basilica of St. Clement covers a more antique basilica, and the recent discoveries in the cutting of the Via Nazionale, have shown that this was the case with the Baths of Constantine. They cover the remains of the house of the Avidii Quieti, and the Claudii Claudiani, built again over another house dating from the first Antonines, and over an older construction in *opera quadrata*.

The first thought would be to throw our blame for all this destruction on the long disorders of the Middle Ages, but it would appear that other periods are equally culpable. The Porta San Lorenzo, for example, of the epoch of Honorius, of the year 403, retains its old level, while the monumental arch of the acque Marcia Tepula and Julia, built by Augustus five years before the Christian era, is now so surrounded by earth that a hay-cart is unable to pass beneath it; it has also been proved that the public way has been raised no less than three times. It is difficult to understand how, during the imperial period, such a great modification took place in the level of the soil, at a time too when the the administration was so active and the building so well constructed.

The phenomenon which we are thus enabled to see commenced, even at the outset of the empire, lasted until the time of the Renaissance. From the fifteenth century, while in every direction the new city had enlarged, those portions neglected were ruthlessly encumbered with rubbish and rubble, and the Forum, after having served as a quarry and a lime-kiln during the Middle Ages, became, from the beginning of the sixteenth century, a vast *immondezzaio*. Round the famous column of Phocas were found *débris* accumulated since the twelfth century. Those of the last century alone were 18 ft. deep; and Nibby, who mentions these details in 1838, adds that the ground was still 27 ft. above the original level. It has been calculated that in the Forum of Nerva the soil has risen some 24 ft., some 10 ft. in that of Trajan, and 12 ft. in the valley in which is situated the Arch of Constantine.

It would be infinite to enumerate all the special facts of a nature to show the continued progress of this monumental ruin of Rome during the Middle Ages, of which we have mentioned the principal instances. It would be possible, with intelligent and assiduous research, to institute a chronological series of figured representations, bas-reliefs, medals, drawings, and engravings, offering the physiognomy of the great Roman edifices, as different ages have known them: such a series would serve as an admirable complement to the already existing collections of busts and coins; or, again, the maps and figured plans might be arranged in such a manner as to afford a successive panorama of the Eternal City. Sig. Rossi has enabled the archæologist to grasp the second of these studies, at least in so far as concerns the Middle Ages and the Renaissance. We will endeavour to follow him in his interesting labours.

THE SUBURBS OF LONDON AND THEIR IMPROVEMENT.

IT is impossible to cast even a glance at the "suburbs" of London, huge as they now are, even as depicted on a map, without a painful feeling of regret at the aspect they present on all sides. Whatever the impression,—artistic impression,—that is made on the mind when you are once in the midst of London and in the confusion of its endless lines of streets and open squares and vacant bits of building-ground, there can be no question whatever as to the poverty and chill aspect of the *suburbs* of it and of the main approaches to it. No one entering London through any one of its main high roads leading into it could for a moment suppose it to be what it boasts of being,—the metropolis of the world. A strong walled and fortified city, as in days of yore, is to be readily pictured, and a far-off view of any one of such, as approached from a distance, must always, to a certain extent at least, have realised our dreams and imaginings about it; but surely no such hardly defined picture of London is to be got by any of its highway approaches to it. Leaving for the present the railway approaches to London, what can there possibly be of less interest or promise than the lines of roadway leading into the great metropolis, bounded on either side, as they for the most part are, by the "house-building," as seen everywhere, and without sign even of where mighty London begins?

But this was not always so, and there may be some interest at this moment in taking a passing glance at it; for are we not, all but day by day, going to war, somewhere or other, with those who yet live in "walled cities" and towns, and who are compelled, whether they will or no, to mark out definitely where their cities begin and end? Whatever the character and aspect of the streets of any such town may be, and whatever the artistic value of the more imposing of its public buildings, of one thing we are certain, and that is, that you can at once know when you are in such town, and when out of it, and where precisely it begins and ends. There may, it is true, be some significance in this contrast. A walled city with definite outline, and one without outline, and always, and day by day almost growing bigger and bigger. We but draw attention to the main

fact. We may here remind the reader that this definite outline was once the state of London itself, and any old map of it will show how tightly and definitely it was at one time *walled-in* with its city gates at definite distances, and how very different the approaches to it were *then* to what they now are. London, before its walls and gates disappeared, must have presented an appearance so totally unlike everything now-a-days to be seen round and about it, that we can but feebly picture it to the mind's eye, even with the assistance of quaint and authentic pictures of it.

But more than this. It is not alone the indefiniteness of the London outline, if it can have one, but the fact of the long roadway approaches to it being always lined on either side for miles with rows of ordinary street houses, no way differing from those in the heart of the City itself; and even right and left of these, long rows of houses are visible every here and there for some distance, so that London is thus made to seem even much bigger than it really is. In this way the great City may be said to commence many miles from its true outline, however defined. It is really quite impossible to imagine any duller or less promising style of building, or architecture, if that word be in any way applicable, than is that of these rows of houses and dull and lifeless streets, and narrow and formal ways, without outline or character of any kind. No power of poetic fancy could make anything out of these. The very brightest or the most sombre of poets could do nothing here,—both art and nature are fairly beaten; and you pass through and along these dismal lengths of house-building for miles, and find at last that you are in London,—mighty London,—itself, but without knowing it: no giant gateway, or guard-house, or even direction post, telling you, in more or less plain or forcible language, that you are at last in it.

We call a moment's attention, as we have said, to these things in the hope of directing the thoughts of those in authority to the surroundings of the huge city in which they are said to take so much pride, and in the hope of aiding in the preservation, every here and there of the little, the very little, that is yet left of art or nature, which, if in their pristine state, might make matters somewhat better than they now are. So much might be said by going somewhat into detail, that it is difficult to fix on any one item, all being of value. Thus it may be urged that London at one time in its history must needs have been all but surrounded with forest, and that patches and evidences, more or less conclusive of this, are yet to be found all round and about it, and in ways at times not a little singular and exceptional. A careful examination of the Ordnance Survey Maps will show this without possibility of doubt, and yet more so an examination of the ground itself. In addition to these evidences, there are the *old* maps of London and its environs, where the tree-covered spaces are for the most part carefully, and we think, conscientiously indicated. It need hardly be said that these are fast disappearing, day by day, and it may be hopeless to attempt much, but still a little might yet be done if due and timely attention were paid to it; and it would surely be worth a little trouble, if not expense, to preserve these few records of a past state of things.

In parenthesis, may we call a moment's attention to the way in which the Ordnance maps are filled in? Rising and falling ground, and thick woods and trees, are shown in spots where nothing of the kind can be detected when on the actual ground. In the Epping Lower Forest, as it is called on the map, a forest of trees is represented, but on the ground itself there is nothing but a wide open space, grass covered, and with here and there a few low ground plants. There is not a single tree on it till you come to the roadway, where, here and there, there is one, but certainly none of forest growth. While, singularly enough, as seen on the map, there is Wanstead Park, which is really a part of the ancient forest; no trees are shown on the map, but the park itself contains not a few of them in close and forest-like groups, and which afford perhaps a good though partial glimpse of the whole forest as it once for miles existed, and with huge trees as densely packed together as are those in Wanstead Park. The City of London Cemetery, immediately to the south of Wanstead Park, occupies, too, a part of the ancient forest, so that from this side of London at least there must have been an approach to it through miles of highway thickly grown on either side with forest trees, and thus imparting to it a character all but at this day impossible to imagine. A passing glimpse at Wanstead but intensifies our regrets at the cruel loss we have sustained in the wholesale destruction of the Forest of Epping.

It must, therefore, be of more than usual interest to note that old London must needs have been all but surrounded by forest, with occasional vacant ground, doubtless, as shown on old maps. Thus there could be hardly a greater contrast between two towns or cities, and their approaches and surroundings, than those of old and modern London. The road to the antique city, through a densely-covered ground, filled with huge trees of ancestral growth, and then the entering the City through a towered wall, must have presented as great a contrast to the present of things as can well be imagined. Material improvement here there may indeed be, and is; but if looked at from any art-point of observation there can surely be but little to boast of. The approaches to, and the entrances into, and the "first view" of a great city, would seem to be of as much importance, and as artistically descriptive, as can be the character and aspect of the City itself when once entered. This is, in truth, a subject hitherto so entirely neglected and passed by, that it is difficult, as we have said, to know well what to urge, or how best to look at it. Of its magnitude and difficulty there can be no doubt, however looked at, but its importance should overbalance these considerations when it is considered how much, as in the case of Epping Forest, has been lost to the public; and how much good might yet be done if this matter were but duly considered.

We could go on, and in some detail give a list of the spots of ground every here and there round London that are yet covered with evidences of the former state of things. We need hardly say how rapidly they are disappearing; indeed, so rapidly that in but a few short years all visible evidences of that former state of things must needs totally disappear. In their place there is, as before said, the usual evidences of a new state of things,—single houses and short rows of houses, either single or double, forming short streets, the ground all round such being industriously cleared of, at least, all evidences of venerable tree-growth. Much of this ground is in the possession of those who could, if they would, do much to hinder the destruction that is going on. Indeed, there would seem to be little doubt that the preservation and growth of trees round and about London town would go far to add to the value of each separate locality as a site for the erection of the ever-increasing bricks and mortar, and of which increase there would seem to be no end,—a very curious problem, and one which may well give rise to not a few useful and solemn reflections. We but advocate here the preservation, amidst all this coming "more house-building," of here and there an open spot, air-filled and if possible forest-tree-filled.

A HIGHLAND MONUMENT.

THERE are few parts of the Western Highlands wilder than Loch Shiel: for twenty-five miles a narrow sheet of water, half a mile in breadth, is overhung by steep mountains, which rising with rock and precipice above it, give a singular sternness to the surrounding scenery; and the grandness of the district is often not a little increased by the peculiar mistiness of the atmosphere so frequent near the Atlantic seaboard; so that on a cloudless day the mountain-sides loom above the loch with large and uncertain outlines. At the head of Loch Shiel, Glen Finnan debouches, and forms a marshy meadow between the rivers Finnan and Caller, which here pour their waters into this great lake. Upon this spot, on the margin of the loch, stands an edifice which at once arouses the curiosity of the strangers,—and they are very few,—who pass by. It is a round structure, too small in circumference to be called, properly speaking, a tower, but which it is difficult to describe by any other name, surmounted with battlements. Upon the top of this a statue is erected,—a kilted figure looking towards the mountains and the opening glen. A closer examination shows it to be surrounded by a wall, on three sides of which a large stone slab is placed, on which are respectively an English, a Latin, and a Gaelic inscription. Upon perusing them we find that the monument above was erected in 1825 by the then Macdonald of Glen Aladale to commemorate the ill-starred attempt of Prince Charles Edward to gain the throne in 1745, an attempt which was practically ended at Culloden, but which gave an opportunity for the West Highlanders to show their devotion to their prince in his wanderings for shelter among the glens which intersect the country around Lochs Shiel and Morar. But the monument commemorates, fitly enough, not the leader of the unfortunate enterprise, Prince Charles Edward, himself, but much more fitly his companions in arms, upon whose loyalty and courage he relied.

And this singular monument is placed in this singular place for an excellent reason, which, in spite of its want of artistic grandeur or beauty, makes it more suggestive than many more noticeable structures. On this marshy meadow Prince Charles erected his standard, and down Glen Caller and Glen Finnan and Glen Aladale the Highlanders flocked to the sides of Loch Shiel. When the fisherman is angling in the loch, and the monument is but a distant pillar, he is reminded of an historical event; he does not criticise the artistic value of the work, but it calls to mind an enterprise to which the distance of time gives not a little of the romantic. And the suggestiveness of this monument seems to show how necessary it is, in erecting material reminders of past events, to give careful attention to locality. A monument to the Highlanders who fell at Culloden placed in a Glasgow square would be absolutely without any suggestive value. Probably it would have been a laughing-stock to the onlooker, both for political and for artistic reasons. But here, on the very spot where the standard of the Stuarts was erected with a Mediæval-like daring, where amid the wildness of the scenery, the streams rush down from the mountains and the lake laps the shore as they did more than a century ago, and will do more than a century hence, was a fit place to raise a memorial to the Highlanders who, however mistaken, were courageous and loyal followers of a miserable dynasty. And the kilted figure, looking towards the hills from whence came his help, is not in itself without its suggestions also, so that, though we may compare the structure on which it stands to a miniature shot-tower, the history appears more poetical and more romantic. An event of a past century is brought more vividly before us by it than by a more pretentious work, or one of greater beauty, placed on a spot less significant. Here the mind can conjure up the past, and the memorial seems to point to the monuments of nature which stand around, and then sink out of sight with its task done.

And in regard to this head of Loch Shiel it is not uninteresting to notice that in the district which immediately surrounds the monument, the inhabitants—the few there are, at least—are Roman Catholics. The laird's house, a new Gothic structure, stands by the side of the loch; but with that exception, there are only two other small cottages outside the policies. In the grounds a new Roman Catholic chapel has been erected by Mr. Macdonald, of Glenaladale, and which is yet unfinished, though sufficiently complete for the purposes of a service. When a spire or tower has been added, it will, on the high terrace above the lake on which it stands, form a striking object for miles down the loch. But it is not so much the material structure of the chapel itself which calls for notice, as the fact that, just around the place where the monument stands to those who fell in the cause of the Stuarts and the Roman Catholic religion—for the Stuarts were essentially the champions of this church,—this religion has still a complete hold. Thus Glen Finnan remains like an island in a great ocean, a single small district peopled by Roman Catholics, among hundreds of Presbyterian parishes, from the Point of Ardnamurchan to the sands of Montrose. The fact adds, as it were, to the appropriateness of the Highland monument upon which we have briefly touched. The Scottish guide-books will say that it should be visited; but the way in which it should be seen in order that it may be appreciated, is not by taking a hasty walk round it at the end of a drive from Corpach and Banavie, whilst the driver baits his horses before he turns their heads back again; but by seeing it from the waters of Loch Shiel whilst they are calm on an autumn evening, or noticing the tower and its statue looming gloomily through a rising mist, when there is time for the suggestions of the place to be aroused, and for a monument to perform its work, and the suggestive part which properly belongs to it.

AMERICAN AND BRITISH IRON TRADE.

AT the time when the British iron trade was at the deepest depth of depression, that in the United States had so recovered from its previous dulness that the makers have been unable to supply expeditiously all the needs of their customers, and orders have been sent in quantity across the Atlantic. From Glasgow, Barrow, Cardiff, and West Hartlepool, shipments of pig-iron have been sent to America; from Furness, Scotland, Wales, and Cleveland, cargoes of rails are now being sent; Sheffield is increasing her shipments of cutlery; and generally the exports of iron and steel to the United States are increasing. There is all the appearance of a genuine revival, to a certain extent; but the question arises whether this demand, abnormal in its recent height, will last? It is not a question that can be very readily answered with confidence. On the one hand the facts need to be borne in mind that American railways are often lighter-laid than British ones, and that with any rapid development of traffic there is a need for a large expenditure to fit them to bear the traffic; and from this circumstance a sudden and intense demand arises. Such has arisen at the present time, and it shows itself at a moment when the producing power of the United States was, so far as pig-iron is concerned, very low, and it was thus impossible to gratify American needs immediately from home furnaces and forges. But in addition to this sudden and intense demand for certain kinds of iron and steel, there was a more varied inquiry for other classes of goods. Good harvests have been known for two or three years, economy has prevailed, specie payments have been resumed, and the immense exertions to lessen debt have borne much fruit. But these kept down the consumption of goods to a minimum, and kept down stocks also; so that now that a wave of prosperity is passing over America, there are wants and needs to be gratified which enlarge materially the demand for iron and steel, and which have given great briskness to the producing and manufacturing works, forcing up prices to a very considerable extent.

Whilst prices are high in the United States they have been so low here that, with cheap freights, it has become possible to ship iron and sell it in the transatlantic markets as low as the home produce. These facts, then, have forced United States orders into the British market, and brought about the improvement witnessed in the last month or two. These being the causes of that demand, it is more difficult to decide as to its probable duration. It is certain, however, that there will be very large additions to the productive power of the United States, and as there are these additions the necessity for drawing upon British producing plant will be greatly reduced. For certain classes of goods,—for crude iron and Bessemer steel,—the demand may continue for a while, but there does not seem the probability of a demand arising for manufactured iron to the extent that there was seven years ago. The demand may be most safely looked upon as an opportune relief, rather than as a large permanent addition to the number of our customers. It cannot be expected that whilst the duties remain at the height they now are on British goods entering the United States, that we shall have a continued and large exportation of manufactured goods thereto,—of goods, that is, which can be produced as well and as cheaply in the United States as here. But whilst we continue to draw such large quantities of grain from the United States, it is probable that we shall send very considerable quantities of certain classes of iron and steel in exchange, and there is in this expectation a relief to our glutted markets.

Beyond this we shall derive probably a larger indirect benefit from the lessened competition we shall have to meet from the United States in non-producing markets. It has not obtained adequate notice that before the United States began to order iron goods from us as she has done for a month or two, her exportations were restricted. She had begun to compete with us in certain markets, and there is now a demand for the goods that have been sent thereinto at home. Her stocks were lessened by the large export trade that seemed likely to be built up; but now that a more valuable home trade is developing itself, the export trade is necessarily restricted. Some instructive figures show the effect of improved trade on the ephemeral export trade of the United States during the last year. During the financial year of the United States which has just ended, there has been a very large decrease in the quantities of certain classes of goods sent out of the country when compared with the previous full-exporting year. The value of locomotives exported has fallen off one-half, and in steam-engines, rails, pig-iron, and other similar goods, there is a marked falling off, only slightly checked by the increase in the exports of lead, steel manufactures, and cutlery, and, so far as is estimatable, these goods showed the chief gain at the early part of the financial year. A portion of these exports were sent to Europe, and the United States had also partial success in introducing her goods into Australia and other countries and colonies. Hence the fact that her manufactures are taken up now by her more profitable home trade is a sign that in these countries and colonies we shall have from America less competition, and generally, as the wave of prosperity advances, there will be fuller work as competitor after competitor is withdrawn from the market in some degree. In this way, and in other indirect ones, we shall benefit from the increased prosperity of the United States. Our vessels will find fuller freights, a part of our surplus population will leave us, more of the manufactures which are here planted but have not yet taken root in the States will be needed there, and for some,—such as tin plates,—there are already enlarged requirements. In these methods, the trade revival in the United States will materially aid in increasing the trade at home, in improving the whole tone of trade, and in restoring confidence to a considerable extent. It was noticeable that, so far as our iron trade was concerned, the dulness commenced by the withdrawal, first, of American, and then of Russian orders, and whilst the United States is in some degree giving us partial orders, there is ground for hope, in a slighter degree, now that Russia has stopped the drain war made upon her resources, that she will become a better customer again in the future. We have yet to notice the signs of improved home trade, but it is gratifying to see any indications of improvement on that which benefits so largely the iron and steel industries,—the outside demand at a time when that outside demand is brought to its lowest ebb by the declension in the exports to Germany. These exports must also rise when stocks are depleted in Germany, and thus the prospects of the future, so far as the iron and allied industries are concerned, are brightening generally,—the American market having been the first to give ours an impetus.

FROM THE BANKS OF THE SEINE.

IN the artistic world of Paris, that world in which the honourable epithet of "artist" is used in a broad sense little known in England, the death of Baron Taylor has been indeed sincerely regretted, for notwithstanding his age, his interest, till within the last few months, when illness had confined him to bed, had never for one instant flagged in the progress and protection of the arts and literature of his adopted country. To few men has it been accorded to live through so eventful a period as to Baron Taylor, for under his eyes, and almost under his direction, the whole modern revolution of art and letters has taken place. Since the day when he visited England in 1818, while still a young man, what a sixty years of active, modest, and laborious research had been passed,—what an immense mass of artistic information had been gathered in! A special interest is attached to his princely work, "Les Voyages Pittoresques et Romantiques dans l'Ancienne France" (Paris, 1820–1854, in folio), undertaken with the collaboration of M. de Cailleux and Charles Nodier, and with the artistic aid of Isabey, Péricault, Ingres, Viollet-le-Duc, among others, from the fact that it was the first publication in which lithography was made use of for the purpose of book-illustration. To this work, published during the time that Baron Taylor was urging the protection of the historic monuments of France, succeeded a series of "Voyages Pittoresques" in Spain, Portugal, and the coast of Africa, Tangiers, Syria, Egypt, Palestine, Switzerland, Italy, England, Scotland, Germany, and Greece, each country being considered from an historical, archæological, and artistic point of view. Baron Taylor, with his venerable contemporary, Victor Hugo, lived to enjoy the rare pleasure of witnessing the revival of the earliest *chef d'œuvre* of the Romantic School, "Hernani," which he himself as *commissaire royal* of the Théâtre Français, had fought so hard to have represented on that classic stage, the piece which on February 25th, 1830, was played for the first time, when the students of the Quartier Latin,—the students of the present day are less enthusiastic,—besieged the "Français" at two o'clock in the day, and packed the house to the exclusion of the equally determined opponents of the new literature. It is more than interesting to recall the recollection of these fast-receding days of the French romantic revival, the work, not alone, it must be remembered, of the poets and the men of letters, but of their firm friendship and co-operation with the painters and the architects.

It is a coincidence indeed interesting that one week should have carried off, on almost the same day, and at almost the same age, two figures so closely knit up with the revival of Romantic art, as Baron Taylor and Edward Blore, the latter the intimate friend of Sir Walter Scott, the prime mover in that revived understanding of the doings of the Middle Ages. Notwithstanding the disregard with which French architects look upon their English brethren, devoting only the merest mention in their journals to our eminent men, the death of Mr. Edward Blore has not failed to be a source of regret to many artists in Paris, coming as it has at the same moment as that of Baron Taylor. All who are interested in what is somewhat carelessly termed Gothic architecture have reason to be grateful to the memory of the early workers in that rich field, men like Blore, like Pugin, and like old John Britton, the earliest, and after all the most industrious, in whose publications will be found much exquisite work by Edward Blore, rendered by the sympathetic hand of Henry Le Keux.

The remains of Baron Taylor, by a breach of the usual custom, in accordance with which here in France the funeral follows death often at two days' interval, are to be interred at Père-la-Chaise on Monday, the 15th inst., and by the time these lines have appeared the ceremony, which will be rendered as imposing as good taste will allow, will have taken place. The Sunday journals announce the order of the ceremony, both a military, the deceased having been grand officer of the Legion of Honour, and an artistic ceremony, Baron Taylor having founded several benevolent societies. The music of the Garde Républicaine is to accompany the convoy, the religious ceremony being performed in the church of St. Eustache. There are to be funeral orations on the part of each of the associations founded by the late Baron, that of the dramatic artists, the musicians, the painters, sculptors, and architects, the inventors and workmen, and the school teachers. M. Edouard Thierry is to speak for the Society of the Men of Letters, and M. Alexandre Dumas, it is expected, will bid his friend a last adieu. M. Cremieux will speak in the name of the Supreme Council of the Freemasons of the Scottish rite, the Baron having been Lieutenant Grand Commander of that order, and all Freemasons now in Paris are invited to be present.

The life of the capital of a great country is forcedly made up of contrasts, and while one portion of the public mourns the loss of a benefactor, another welcomes the revival at the New Opera-house of an old favourite, Auber's "Muette de Portici," better known to the English public as "Masaniello," represented for the first time at the then Académie Royale, the historic old house in the Rue Lepeletier, on February 29th, 1828, and not played in France since the last days of the Empire, nine years since. It is not our intention to enter into a criticism of the libretto of Scribe or Auber's stirring music, nor the curious anecdote of the sudden creation of the poor *dumb* Fenella,—Walter Scott in the twenties was in high esteem in Paris,—owing to the impossibility of finding a singer capable of representing that dramatic personage, and holding a place worthily beside an *Elvire* such as Mme. Cinti-Damoreau,—nor into the further details connected with the historic opera which has played no mean part in more than one real revolution, but it is within the domain of artistic discussion to speak of the costumes and the scenery.

If our experts in London were occasionally shocked during the recent visit of the French Comedy, by the want of absolute accuracy in the *mise en scène*, and in the historical costume, which in our good nature we attributed to the company being away from home and their own surroundings, what would they say to the revival of "Masaniello" at the Opera-house here, where

the presence of the Neapolitan atmosphere, local colour and sentiment, are utterly wanting,—so much so that the French critics, who are not disposed to quarrel with their own countrymen, complain of this want, and even go further in pointing out the inaccuracy of costume. The costume and scenery in this revival are certainly such as we in England in the present day would be severe upon, the more so as old opera-goers had imagined that such accessories had become a traditionary certainty. Even at the Théâtre Français, in other pieces, it is not difficult to detect errors of costume, especially in that interesting detail involved not so much in the dress as in the surroundings. The chorus and the "supers" can at least be made correct, but lady actresses doubtless are exceedingly difficult to manage in submitting to the directions of the severe costumier, a fact probably owing to their affectionate clinging, less to the traditions of the past, than to the more fascinating combinations of the dress of the present day.

If, in Paris of all cities, theatrical managers are not able, with the aid of well-paid costumiers, and a large Government grant, to prepare their pieces with due regard to absolute accuracy in costume and scenery, an effort to attain which is evident, the French public have indeed a right to ask, what is the cause of failure in a subject on which the world formerly regarded Paris as the highest authority? May it not be owing, as in many other cases, to an over-estimation of their own ability, and a want of watchfulness of what is being done in other countries?

THE POOR IN ENGLAND.

A short notice of the Rev. Richard Hibbs's career having appeared in a contemporary induces me to offer you a few facts gathered from more reliable sources. The rev. gentleman is only known to the public as an eccentric clergyman who preaches in the London parks on the Poor-law system of England, and denounces its shortcomings in no measured terms. The course is uncanny: it raises a few weak friends and a host of virulently bitter enemies. A man may get great glory as a philanthropist by associations to set up coffee or *ninny-broth* shops at street corners for workmen, but if he lend a hand to lift the really poor out of their distress, a deafening clamour rises up on all sides. The better class of bystanders take umbrage as if rebuked personally; the police interfere, not to aid him, but to prevent scandal, by removing the speaker of ill-tidings. The police authorities protect the constables, the magistrates side if practicable with Scotland-yard, and the press reporters sneer it all down. The poor, beyond hunger, do not understand their own wants or care, and the rich think the question to be a muddy one, and so refuse to stir. When Mr. Hibbs attained his majority, he was still engaged in mercantile pursuits, but with a strong longing for the Church. From his grandfather paternal he had a small legacy, and he used it to read with a tutor. In a year and a half he could undertake a tutorship in the school of an Oxford M.A., and performed its duties efficiently, though a Cambridge B.A. had broken down at the task, falling short in his classical attainments. Pretty well this for a youth who had had but eighteen months of study. At this and another establishment he spent the next three years, and then entered at St. John's College, Cambridge. He had no money, so he made it out of coaching others for the "great and little go" that as yet he had not passed himself. The "plucked" sought him, for success attended his teaching. He obtained a scholarship, and continued to pupilise for sheer funds to satisfy the college expenses, and in 1841 came out in the poll sixth man in the list. Having approached so near to captaincy he was in high favour as a coach for "poll men"; but his original bias to the ministry led him now to relinquish this highly lucrative opening for a curacy at Hatfield, Herts. The wisdom of this step may be variously reckoned; but no generous mind will permit disparagement of the spirit that dictated the course. He was able to combine with the curacy tutorship in an eminent private school, where the sons of noblemen and gentry were prepared for Eton; amongst them were the present Earl Derby and the late Marquis of Hastings (then Lord Rawdon). The son of Viscount Canterbury and many other noblemen have been under Mr. Hibbs's tuition, so that in the learned and educational world he is no mushroom growth, but widely, highly, and respectfully known. Any obloquy he has met with is simply due to his stepping out of the track to help the poor. The course may be useless, hopeless, what you will, but no want of success can tarnish its liberal disinterestedness. It is not because we agree with the reverend gentleman that we pen this, but that we think his conduct honourable to him, and that the public would honour it if they understood it sufficiently. The difficulty is to make them do so without prosing over the particulars. From Hatfield he went to Corton, and took charge of the parish, but it was at Hatfield that he first noticed the sufferings of the poor, and the maladministration of the relief funds devoted to them. In his Lenten sermon on "Prussia and the Poor"; in letters to the *Times* and *John Bull*; in consular chaplaincies; in journeyings to Stockholm, to Christiania, and Copenhagen; in voyages to Italy, to Portugal and Spain, and in Mid-Germany, he has toiled to understand the treatment of the poor, and, unhappily, he comes back convinced that in all wide Europe there is no country in which they are so ill-cared for as in London and the great towns of rich England. Sismondi told us our distribution of wealth was defective in England. The Rev. Richard Hibbs does but confirm Sismondi. He points out in practice what the writer showed in theory. No wonder that he would not quietly submit the other day to be driven out of the Regent's Park by two violent park-keepers. He summoned them to the Marylebone Police-court and carried his point. The men did not attempt to establish their charge of "seditious language," and upon their humble apology, Mr. Hibbs, at the advice of the magistrate, was content to allow the summons to drop. He has now established his right to preach in the parks unmolested, in season and out of season, on the wholesome but unpalatable text that England, of all places in Europe, is for the poor the very worst to live in. In common fairness to a conscientious gentleman and scholar, if any anger is excited by this, it should henceforth be directed not against the preacher, but the state of things in our midst. No man in a rage sits down to the twelfth book of Euclid to master it, and the Poor-law problems of England require, to understand and solve them, more sober thought than goes to the mastery of the famous twelfth book.

C. A. Ward.

THE HOLLOWAY COLLEGE FOR WOMEN, EGHAM.

On the 12th inst. the important ceremony of laying the first brick of the College for Women, to be erected, at a cost of 257,000*l.*, by the munificence of Mr. Thomas Holloway, at Manor Lee, Egham, Surrey, was performed by Mr. George Martin, brother-in-law of the founder. At half-past twelve o'clock the architect, the builder, and a few gentlemen, and a large concourse of workmen, assembled round a temporary erection, near which the brick was to be laid. On Mr. Martin arriving on the ground a silver trowel, with ivory handle, was handed to him by Mr. John Thompson, of Peterborough, the contractor, and the brick was then adjusted and laid, Mr. Martin giving it the customary three taps, and then declaring it to be well and properly laid. Three cheers each were then given for Mr. Holloway, the founder, with the hope that he would live to see the top-stone laid, Mr. Martin, Mr. Crossland, the architect, and Mr. Thompson, the builder. Before leaving the platform, Mr. Martin said:—"In laying the first brick of the Holloway College to-day, I congratulate you, Mr. Crossland, as the architect of the magnificent pile about to be erected, that in the simple act I have just performed commences the realisation of those plans and designs on which you have bestowed so much skilful labour and attention, and which have been so thoughtfully directed throughout by Mr. Holloway, and I congratulate you still further in having secured for the carrying out of the same so able a coadjutor as Mr. Thompson, and I think that apart from the extent and importance of the work itself, he will feel a pride in associating his name with an undertaking having such objects as the present. He comes to the work, I am sure, with a good heart, and I believe with a good and able staff, for report says of them all that they are men to be proud of, and report, we know, seldom or never flatters. Therefore, with so fair a beginning, we are justified in anticipating that with God's blessing, and the harmonious working of all concerned, this women's college will be finished to the satisfaction of the generous founder and to the honour and renown of its architect and builder. There are many important duties which devolve upon the clerk of works and foremen necessary to secure this, and I feel sure they will be faithfully performed. I am, to-day, your most insignificant workman, a bricklayer, who has required a great deal of coaching; but if every bricklayer could share my desires in the matter, we should make a glorious work of it. I wish you all health and strength to attain the accomplishment of this grand work, and I only regret that Mr. Holloway is not here to offer you his good wishes. I do so in his name, and I pray God to give His blessing on the work and on the workmen, from the highest to the lowest, and to the founder the happiness of the full realisation of his noble scheme."

The building is designed in the French style of Francis I., the material to be used being red brick with Portland stone dressings.

Mr. Crossland, we may add, was also architect for the sanatorium at Virginia-water, likewise erected at the cost of Mr. Holloway.

The site of the new college has cost 25,000*l.* The contractor's term for finishing the building is four years.

Mr. G. Rogers is clerk of the works.

NEW PUBLIC BATHS AT LEICESTER.

About two months earlier in the year the first part of the new baths erected by the Corporation of Leicester, in Bath-lane, were opened, and last week the remainder was handed over for public use. The accommodation provided is a first-class circular swimming-bath, 40 ft. 6 in. in diameter, with dressing-boxes, &c., attached; a second-class swimming-bath, 130 ft. long and 24 ft. wide, horse-shoe in shape, and running rather more than half-round the first-class swimming-bath, with dressing-benches, &c., attached, and space reserved for private dressing-boxes. (This bath, opened about two months since, has already been used by from 30,000 to 40,000 bathers.) Private baths are also provided for both males and females, together with waiting-rooms and separate entrances for the different classes. Ticket-offices, superintendent's residence, and boiler-house complete the present accommodation, but space has been reserved at convenient points for the extension of any part, and the Corporation are now proposing to utilise part of the reserved space by erecting a small washhouse for towels, &c., together with an extension of the filtering arrangements. Nine private baths are set apart for ladies, and the whole establishment is reserved for their use upon the Friday in each week.

The principal front is to Bath-lane, but the river front is equally conspicuous, and these two frontages, not being parallel, required considerable care, to prevent the necessarily large roofs from breaking awkwardly against an irregular line. This has been accomplished by making the centre swimming-bath circular, adding a gallery, on which there is room for twenty-one private baths to this central bath, and so raising it to a considerable height, and then grouping the other buildings round it. This has a good effect both on the exterior and interior, particularly in the roofs, which are of wrought iron, and it also meets other difficulties connected with the foundations and the surface levels. The general style of the building is Romanesque, freely treated, terra cotta being largely used for enrichments. The cost of the buildings has been something under 10,000*l.*

The work has been carried out for the Corporation from the designs and under the superintendence of Mr. J. B. Everard, of Leicester, as engineer and architect, by Messrs. Bass & Langton as the principal contractors, with Messrs. Lindley (mason), Ellis & Wormell (slaters), Smith (plasterer), Townsend (painter), all of Leicester; and Mr. Cordon, of Nottingham (excavator), as sub-contractors. Mr. Whitmore, of Leicester, was the contractor for the plumbing, &c.; and Mr. F. Cox the carver.

Sea-wall at Newlyn-green, Cornwall.—Mr. Arnold Taylor has just held an inquiry at Madron with reference to a proposal of the Madron Local Board to borrow 300*l.* from the Government for the reparation and rebuilding of a portion of the sea-wall at Newlyn-green, under the direction of Mr. J. W. Trounson, the surveyor to the Board.

THE DEVELOPMENT OF THE MANUFACTURE OF STONEWARE FOR SANITARY AND ART PURPOSES.

AT the recent meeting of the Association of Municipal and Sanitary Engineers and Surveyors, the members assembled at the pipe factory, in the High-street, Lambeth, after inspecting which they proceeded to the new buildings upon the Albert Embankment, recently illustrated in the *Builder*, where Mr. Henry Doulton delivered an address on "The Development of the Manufacture of Stoneware for Sanitary and Art Purposes."* Lambeth had, he said, been long noted for its potteries, and he believed it was quite an ancient seat of pottery manufacture. Speaking of Lambeth he also included Vauxhall, which was in the parish of Lambeth. About the middle of the seventeenth century workmen from Holland settled in Lambeth, and gave an impetus to the manufacture of delf-ware, but salt-glazed stoneware had for many years been the chief product. Stoneware was a dense, hard, sonorous substance. It was not absolutely necessary that stoneware should be salt-glazed if it had all the qualities of denseness and sonorousness, and was made of clay which would stand a high degree of heat and would also resist acids. Lambeth stoneware was made of clay found in Devonshire and Dorsetshire. Persons were surprised that in Lambeth it was possible to produce articles at the prices at which they were charged; but when he told them that clay was brought from Devon and Dorset by sea at the rate of about 5s. 6d. per ton, they would understand that they were able to make use of the finest clays procurable. He would explain to them the difference between salt-glazed stoneware and all other kinds of pottery except the very commonest ware, and some kinds of bricks. Most kinds of ware were fired at least twice,—first in the "biscuit" state, and secondly in a saggar or box, and were thus protected from dust and from the destructive gases evolved from the coal. In the biscuit state the ware could be handled with ease, and it could be painted and decorated in any desired style. It was then dipped in glaze of about the consistency of cream, after which it was again put into the kiln (still in saggar), when, the heat melting the glaze, the pattern shone through and became visible as shown in the specimen exhibited. There could be three, four, or more firings; as, for example, when the decorations were in gold, or where there were delicate tints and colours to bring out; often a separate firing being required for each. Salt-glazed stoneware had but one firing, and that not in a saggar, but in an open kiln, and exposed to the direct action of the flame. In Lambeth, until within the last forty years, the use of salt-glazed stoneware was chiefly confined to common articles, such as ginger-beer and ink-bottles; but, as the material was very pure and strong, it was found to be admirably adapted for the production of vessels used in the manufacture of chemicals, and capable of withstanding the action of acids. "Doulton ware" was introduced about ten years ago, and the beautiful specimens exhibited were all burned in an open kiln, with the flames playing around them, and sometimes a charming harmony of colour was thus produced. He need not inform them that to procure these colours had been a work of considerable difficulty and the result of numerous experiments. For instance, at the first attempt to obtain blue the colour had turned out black.

Mr. Doulton then described the process of salt-glazing. At the highest temperature of the kiln, the salt (chloride of sodium) thrown in was converted into vapour, and decomposed by the silica of the ware, forming silicate of sodium, which produces the surface-glaze. This process takes place at the close of the firing, and usually lasts from ten to fifteen minutes. Salt-glazed stoneware was produced extensively in Staffordshire many years ago,—about 1730 or 1750 it was very perfect. His friend, Professor Church, had amongst his collection of pottery some admirable specimens of these early productions; but, unfortunately, some 1,600 of such specimens were destroyed in the Alexandra Palace fire. There were few of such pieces now to be obtained. The manufacture of salt-glazed ware in Staffordshire had died out. The difficulty of getting good shapes in this hard ware, the risk of firing in the open kiln, and the British demand for articles more uniform in appearance, led to the gradual discontinuance of the manufacture. Now there was not a single salt-glaze kiln in Staffordshire. Lambeth, Bristol, and Fulham, were the centres of this industry up to a recent period, when it was discontinued at Bristol. At the last-named place, about forty years ago, what is called the "enamelled" stoneware was first made, and in consequence it is often termed "Bristol ware." They would observe in the specimens of this ware a uniform appearance. This, like the salt-glazed ware, was treated in one firing. But the article is dipped into a glaze formed of felspar and flint, and the top coloured by manganese. In this ware druggists' pots, spirit bottles, and numbers of other articles, were made. Lambeth was, however, chiefly and essentially a salt-glazed pottery district.

He would now call attention to the marvellous development in salt-glazed stoneware pottery during the last thirty-five years, and the causes of such progress. For about sixty years the manufacture of pottery in Lambeth had gone on with considerable increase. In 1820 there were only sixteen small kilns, producing ware to the value of about 300*l.* weekly. In 1846 he met Messrs. John Roe and John Phillips, and discussed the practicability of supplying stoneware pipes for house and street drainage at a moderate cost. He was deeply indebted to Mr. Roe and Mr. Phillips for their advice, and he was encouraged to proceed with such improvements that they were able to advocate the use of these pipes for sanitary purposes. He himself had made pipes on the wheel, and he had paid workmen as much for making them as the pipe itself now realised at some works. Since then sanitary science and the use of stoneware had advanced *pari passu*. Though the demand has arisen for more artistic and attractive-looking pottery for indoor use, salt-glazed stoneware for strength and durability combined with cheapness is now and is likely to remain unrivalled for sanitary purposes. His firm had been first in the manufacture of stoneware pipes, and had introduced improvements of all kinds in sanitary appliances. His father, Mr. John Doulton, commenced in Lambeth as a potter sixty-four years ago, and he could recollect the time when a barge of clay and a barge of coals were considered to be a very good stock (a "freight"* of clay being distributed amongst several potters), and when one blind horse sufficed to turn the mill to prepare the requisite quantity of clay, and the excitement that prevailed when the first steam-engine of eight-horse power was erected. The works of his firm at Lambeth, without including the new buildings upon the Albert Embankment, now covered seven acres. At Rowley Regis they have two large factories, and two large ones at St. Helen's; also one at Smethwick. One of these is no doubt the largest pipe works in the world. In 1878 the number of persons employed in their various works was 1,600, and the quantity of clay and raw material prepared during the year was 125,000 tons. Steam power employed (not including a large 100-horse power engine lately supplied to the new building) was equal to about 800-horse power. In the same period 48,500 tons of coal were consumed. The average quantity of drain-pipes they produced was 25 miles per week, or 1,300 miles per year, in sizes from 2 in. to 30 in. diameter. He would now specially notice the history of the Doulton ware. At the 1867 Exhibition in Paris, some rather good shapes of vases, &c., were shown, which readily sold, and which he would now be willing to buy back at several times the price they realised. In 1871 was held the Ceramic Exhibition at South Kensington, where the specimens were at first put under shelves almost out of sight. But their merits being observed, some were transferred to cases and properly exhibited. He was encouraged to proceed, and since then this ware has found a place in every museum in Europe, in many in America, and even in Japan. He would presently show them the process of "throwing," or, as it was called in Lambeth, "turning." It was an art which he himself had practised, and it seemed to him one of the most interesting of all arts. Moulding was death to art. He would be ashamed to see a piece of Doulton ware with a seam upon it, indicative of its having been "moulded." A few years ago "throwing" was gradually going out of use. In Staffordshire it was almost entirely discontinued for beautiful shapes. It was so easy when a shape was produced to pour a little plaster of Paris upon it, and reproduce it in any quantity by moulding. But that was not art. Those fine Greek vases so familiar in exhibitions were made upon the potter's wheel in precisely the same way as the vases, &c., which were now before them. The artists engaged had to execute the original design for each piece of Doulton ware. All was "handwork," and, as a rule, designed by the same person who actually did the work. Take one of the pieces before them. It had been formed upon the wheel. The pattern had been scratched or incised upon it. Colours that would stand the trying test to which he had alluded were put upon it, all the while in its clay state. Then it was placed in the kiln, and the fire playing about it, the colours were brought out by salt glazing. They had now the blue, and indeed the whole range of colours as exhibited. He was speaking to sanitary engineers, and he thought that this ware ought to be used even more extensively than it was in sanitary work. They were introducing it for cups and handles in water-closets, knobs, bosses, &c., both for indoor and outdoor use, as well as for plaques and tiles. It was not only suitable for domestic and indoor uses, but would be found perfectly durable under the most trying circumstances. Even strong acid trickling down upon the pieces would not harm them or destroy the colours. He had no doubt that in future this ware would be largely used for architectural and sanitary purposes. Then there was the "Lambeth faïence" for tiles, panels, plaques, &c. There was a bath-room adjoining, fitted with panels, tiles, &c., which they would presently have an opportunity of inspecting. He did not claim the credit for the invention of this ware, as was the case with Doulton ware. But very much had been done in introducing good shapes, and adapting it (the faïence ware) to practical purposes. The speaker here pointed out that ornamental pottery was admirably adapted for decorating apartments for sanitary uses. Of the new "Doulton Impasto ware" he had not time to speak at length. The first specimens of this ware were drawn from the kiln upon the morning of the recent visit of the Princess of Wales and the Crown Princess of Germany to the pottery. The ware was made upon the wheel, and the patterns laid upon it in high relief. It was then fired, and when in the biscuit state was coloured, and again fired. It was thus as strong as ordinary pottery, but of course not so durable as Doulton ware.

Afterwards, in reply to a question as to whether all the artists employed were English, Mr. Doulton said that not only were they so, but that they all belonged to Lambeth. There happened to be in Lambeth one of the best schools of art in England, and he had received assistance for many years from Mr. Sparkes, the head master, who had placed the resources of the school at his disposal. Some of the artists who had been students of the school had shown great talent. There was George Tinworth, whom he might call a genius, and who had lately executed a large panel for the reredos of York Cathedral, and was now designing panels in the same class of work to be placed all round the Guards' Chapel in Wellington Barracks, St. James's Park. Miss Hannah Barlow likewise had remarkable talent, and there were very many other artists he would wish to mention did time permit.

* The proceedings at the annual meeting of the Association have been printed in pamphlet form, edited by Mr. Graham Smith, C.E., secretary of the Association, and are published by E. & F. N. Spon, Charing-cross, 1879.

* Small shipload, 150 to 300 tons.

Removal of Gravel at Chelsea Hospital.—For some months past a considerable portion of the public inclosure on the north side of the Queen's-road, Chelsea, forming part of the grounds of Chelsea Hospital, has been turned into a gravel-pit, and made an eyesore to the whole neighbourhood, solely for the sake of the gravel and sand it contains, the latter being carted away, and replaced by what is apparently nothing better than rubbish and refuse from the London dust-heaps. This having been well saturated by constant rains, has converted a large portion of this recreation-ground into a dismal swamp, covered with shapeless mounds of earth, at present bare of turf. We should be glad to learn by whose orders and for whose benefit this objectionable course is being pursued. We have been long conversant with the injurious practice on the part of speculative builders trying to make the utmost of their bit of land, but we never heard before of its adoption by a Government Department.

DANGEROUS STRUCTURES UNDER THE BUILDING ACT.

REMARKS ON THE LAW AND PRACTICE.

CONSIDERABLE difference of opinion seems to exist among architects on the above subject, and the law as it at present stands is often greatly misunderstood. The dangerous structure clauses of the Building Act are the only existing laws for the prompt protection from building accidents of the lives not only of passengers in the street, but also of the inmates of houses and the workmen engaged in erecting them; and it is therefore important, not only that their meaning should be well understood, but that they should be fairly and equitably put in operation against all owners of insecure property. The other portions of the Building Act simply provide for the supervision of buildings *after works are done*, and the punishment of offenders by the magistrate, and the only protective enactments in it as regards *securing life from danger* are, therefore, clauses 69 to 73, in Part 2 of the Act. The number of dangerous structures, concerning which proceedings are taken in the course of the year in the metropolis, amounts to nearly 2,500, and when it is remembered that every recurring year several lives are actually lost from the fall of either the whole or portions of buildings, to say nothing of persons who are permanently injured, it will be seen that the prompt working of this part of the Act is a positive necessity.

There is no doubt that much of this danger arises from defective and worn-out party-walls. In some parts of London there is scarcely a good party-wall in the whole street, and when old buildings are taken down and new ones about to be erected, the opposition of adjoining owners to have the old walls on the sides of their houses removed becomes a continual *source of danger*.

Mr. Vulliamy, the Superintending Architect of the Metropolitan Board of Works, in giving evidence before the coroner's inquest on the Haymarket accident on the 8th of March, 1878, said "*he knew from experience, in seeing that the law was carried out in connexion with the Dangerous Structures Act, that people would use almost any amount of persuasion and cajolery in the hope of prevailing upon himself and the district surveyors to allow old and dangerous party-walls and other unsafe structures to stand; but he always turned a deaf ear to such entreaties when he had any reason to suppose that a structure was unsafe.*" He was not, however, asked what he would have done had the Board summoned the owner of a dangerous wall, and the magistrate dismissed it because, though admitted to be insecure and defective, it was prevented from falling by shores. It is evident he could not summon the builder under the other clauses of the Act for using the old wall till the new works were in great part done, and thus there would always be the chance of its being cut about and very probably falling, while the new erection was going on.

The dangerous structure clauses of Part II. of the Act, however, are so *clear and consistent*, that, if they are only properly *administered*, there need be no difficulty in the matter; but it is in consequence of misunderstandings in the *working of the law* that *dangers are multiplied*.

Clauses 69 to 71 say, that if it is made known to the Board of Works that a structure is dangerous, they shall require a survey to be made by a District Surveyor or other competent Surveyor, and that upon completion of his survey he shall report to the Board.

Clause 72 says,—If the certificate is to the effect that it is in a dangerous state, the Board shall cause the same "to be shored up or otherwise secured," and, if necessary, hoarded in; and, that *after doing this*, the Board shall give notice in writing to the owner or occupier forthwith to *take down, secure, or repair* the same as the *case requires*.

In order fully to understand what follows it is necessary here to carefully consider the exact legal and common-sense meaning of the words *dangerous state* in the Act.

Danger is defined in Johnson's Dictionary to be risk, hazard, peril, insecurity, or jeopardy, and any structure is in a dangerous state when either of the above words may be fairly used to express its condition.

Perhaps the best definition, which clearly explains the meaning of the words, is the following:—

"*Any structure is in a dangerous condition when it is not permanently secure against all ordinary influences which may be brought to bear upon it and any extraordinary influences which may be fairly foreseen.*"

A few examples will illustrate this. A balcony originally constructed of only sufficient strength to bear the weight of some flower-pots, is not safe if a casement window is opened on to it so as to adapt it for persons to walk on, and the District Surveyor (if called on to report) must certify that it is dangerous, even though it *shows no signs of falling*; but if it can be *fairly foreseen* that there will be at any time a *rush of people* on the balcony to view a public procession, he should then, in giving his evidence, ask the magistrate to order it to be made strong enough to *meet that contingency*.

Again, an old warehouse wall may be in no danger of immediately falling because the building is empty, but if there is a probability of its being occupied, the District Surveyor should report it dangerous (if called upon) unless it is strong enough to bear an ordinary and fair warehouse load on each floor.

If a column placed at the angle of a building has a load on it of 40 tons, and the District Surveyor is asked to report on its safety, and finds, according to ordinary calculation, it ought only to be loaded to 25 tons, he is fairly justified in reporting *it dangerous*, though it *apparently stands firm*, and he should, if there is a probability of any extra strain being brought to bear on it, say, for instance, from the vibration of a parish steam-roller, consider this in his certificate.

The notion so common amongst many surveyors, as well as the general public, that a structure must be *actually falling* before a District Surveyor can certify it to be dangerous, is one which is fraught with peril to the public safety, and when a building shows actual signs of falling, it too often results in a report *on the damage done*, or inquiry as to *cause of death*.

The question as to the factor of safety to be adopted in these cases is one which must be regulated by the common-sense every-day rules used by practical architects and builders; but it should be remembered, as regards old and decayed fabrics, that the rule of safety is generally an *unknown quantity*, only to be settled by the practical experience of experts accustomed to these special class of cases. We once heard an eminent counsel severely cross-examine an architect because he could not state the weight old and decayed brickwork ought to fairly carry per foot superficial. It is evident the question was an absurd one, and he might as well have asked an actuary to give him the number of years' expectancy of life of a person in a consumption without having medical opinion of the particular case.

We contend that the foregoing definition and illustrations are strictly within the scope and meaning of the words in the Act.

Clause 72 distinctly states, that upon receipt of the surveyor's certificate "that a structure is dangerous," the Board must *first shore up* the fabric, and then give notice to the owner to *execute works, &c.*; and as the Board are compelled to prosecute *after* shoring, it is clear the Act always requires something to be done beyond the first operation of shoring.

Clause 73 says, that if the owner or occupier have "failed to comply with the notice served on them as speedily as the nature of the case permits," the Board may summon them before a Justice, and it shall be lawful for him to order the owner, or in his default the occupier, to take down, repair, or otherwise secure such structure to the satisfaction of the surveyor who made such survey.

If default is committed, the owner is then to be summoned, and it is clear again, from the words of the Act, that the Justice has no power whatever to consider the *first temporary act* of shoring as a *compliance with the law*; but the owner is to be forced to carry out the notice served on him "to take down, secure, or repair, as the case requires."

There is no doubt that some surveyors have been led away by the words "otherwise secure"; but it distinctly says, to the satisfaction of the surveyor, which must mean, not to his satisfaction as a mere practitioner in his calling, but to his satisfaction acting under all the clauses of the whole of the Building Act, which he is specially appointed to see carried out.

Clauses 9 and 39 of the Building Act distinctly specify that *all works* of this character in securing external and party walls, &c., shall be done according to the *rules of the Act*; while sections 14, 15, and 56, and the first schedule of the Act, distinctly require that a building shall be supported by brick or stone walls, and that no building shall be merely *upheld* by such means as *timber shores*. It is evident, indeed, that the public security requires such should be the case. Were buildings to be allowed to be upheld by shores, in some of the older parts of London the pathways would become an avenue of wooden props, and in case of fire not only would the buildings fall, but the conflagration would spread from house to house, and involve whole streets in ruin.

It is, however, somewhat singular that such a confusion of ideas, as the impression that shores can *secure a structure* should have ever originated in the legal mind. The words everywhere in the Act are to take down, repair, or *secure the structure*,—by mere shoring, *nothing whatever* is done to the *structure itself*. The shores are not made *part of* nor *incorporated* with the *structure*; they are merely an external something *stuck against it to prevent it becoming worse or falling down*. A broken leg-bone, for instance, cannot be said in surgery to be *repaired* or *secured*, because *splints* are placed *round it*; the bone itself is unaffected by the splints, with the exception that the parts are kept properly together while nature carries on and perfects her wonderful healing process; but suppose the bone a diseased one, and the parts refuse to unite, any number of splints will never *repair or otherwise secure it*, at any rate to the satisfaction of the owner, and the leg must be cut off: so with the decayed, rotten, or diseased house, the defective parts may, pending adjudication, *rest on the shores*, but the living workman, like the living principle in man, must take the structure in hand; and if he can secure it in accordance with the laws *for its existence*, namely, the rules of the Building Act, well and good, but if not, *it must come down*, and a magistrate is as legally wrong in considering a defective or cracked house safe *because it is shored*, as a surgeon would be in reporting a broken leg-bone safe because it *was in splints*.

In conclusion, we would observe that District Surveyors are constantly met with such remarks as the following:—That the structure is not actually falling, that it is shored up, that there is no imminent danger, that it is temporarily secure, or may be said to be fairly safe, &c., whilst the very parties who urge these plausible pleas, if asked boldly to give a guarantee or to take the responsibility of the safety of the building in question, at once shrink back and say they have come as paid witnesses and they *must do the best they can for their clients*, and will not face the responsibility of certifying as to the safety of the building. Practically, however, the District Surveyor has to do this, and if he gives a certificate that a structure is not dangerous it amounts to this at least, that on inspection he can detect neither risk, hazard, nor peril to any one from its condition.

As regards the shameful and dastardly plea so often attempted to be urged by barristers in court, that these laws are made for the protection of the passenger in the street, but not for the workmen in the building, the author believes that though some barristers may try and urge it for the purpose of worrying the District Surveyor, yet there does not exist a magistrate who would be influenced by it. The laws are made for all, and every one as well as the street passenger has a right to ask the magistrate to enforce them for his protection. The workman honestly earning his daily bread by underpinning a ruinous party-wall has as much right to be protected by the laws made for the public safety as the merchant in the building on the other side in his counting-house, and the writer is determined to let those who act in these cases, when they come in contact with himself, know and realise that they will *do the best for their clients* by clearly understanding, and fully and frankly carrying out the enactments made for the mutual benefit of owners of party structures, in which they each hold an *undivided interest*, be it either for *profit or loss*. It is not by raising *legal questions* over *dangerous structures* that the joint owners can best settle their differences, and the wisest way to avoid litigation and loss is to frankly recognise facts and settle their disputes by arbitration as the law requires, and at the same time promptly comply with the legal regulations made for the public safety.

ROBERT WALKER, F.R.I.B.A.,
District Surveyor for St. Martin's-in-the-Fields.

ROYAL ARCHITECTURAL MUSEUM.

PRESENTATION OF PRIZES.

THE evening classes of the School of Art in connexion with the Royal Architectural Museum were re-opened for Session 1879-80 on Monday evening last. A meeting of the students and their friends was held at seven o'clock, when the Rev. Canon Duckworth presided, and subsequently presented the prizes and certificates gained by the students during the past session.

The Chairman, in opening the proceedings, said that the Architectural Museum, situate as it was in a densely-populated neighbourhood, and on the edge of what was once Thorney Island,—under the very shadow of that glorious work of art, Westminster Abbey,—was doing a great deal of good work. This was the fourth year that the art-classes in connexion with the Science and Art Department had been carried on. They included a modelling-class, a life-class, and a ladies' class. The members attending during the past year were rather fewer than in the previous year, the numbers being 131 as against 135; but, on the other hand, the average attendance had been considerably higher, and the school had, for the first time, gained a gold medal, which had been awarded to Mr. Andrew Garbutt, a gentleman who had won many other distinctions, including a 50*l.* prize given by the Goldsmiths' Company.

The following is the list of students who obtained prizes:—

1. Robert Anning Bell, certificate for model-drawing and freehand, and second-grade prize for model-drawing.
2. Robert Donaldson Hawes, certificate and second-grade prize for perspective.
3. John Alexander Smith, certificate and second-grade prize for model-drawing.
4. Henry Budd, certificate for free-hand and perspective.
5. William R. Jones, certificate for free-hand.
6. Rolant S. Rawberts, certificate for free-hand.
7. Arthur W. Phillips, certificate for free-hand.
8. Edward Wilson, certificate for model-drawing.
9. Arthur Harris, third-grade prize for model from the antique.
10. James Smith, third-grade prize for model from the antique.
11. George Pridmore, third-grade prize for design.
12. William Kitson, third-grade prize for model from the antique.
13. Walter Allan, third-grade prize for modelled design.
14. Andrew Garbutt, third-grade prize for a figure modelled from life. Mr. Garbutt has also gained two Queen's Prizes for design, and a Gold Medal for a model of a twisted column, original design, for which he also obtained the first prize of the Plasterers' Company, value seven guineas. Alluding to this work, the examiners in their report stated that "it is decidedly original in treatment, and carried out in good taste." Unfortunately, the Queen's Prizes and Gold Medal had not arrived at the Museum up to the time the meeting was held, and therefore they could not be actually presented, but the Chairman warmly commended the assiduity of Mr. Garbutt, and expressed a hope that his career as a student would be but the prelude to further distinction.

The Chairman next announced that during the session now entered upon, in addition to the prizes offered by the Department of Science and Art, extra prizes would be given by the Council of the Museum. The president (Mr. Beresford Hope) had promised a guinea for a book prize; Mr. Brindley had also promised a guinea book; and a student, who wished to be nameless, had given to the curator (Mr. Randall Druce) five pounds to be expended in prizes. The Council would thus be enabled to offer for competition by the students during the current session, (1) a book prize, value 2*l.* 2*s.*, for best modelled design; (2) a book, value 2*l.* 2*s.*, for best model from the antique; (3) a book, value 2*l.* 2*s.*, for best drawing from the antique; (4) a book, value 1*l.* 1*s.*, for the best attendance; and (5) a book, value 1*l.* 1*s.*, for the best results in second-grade examinations. In addition to these prizes, Canon Duckworth said he should be very pleased to offer a guinea prize, which will probably be given for a measured or other detailed drawing of some feature of architectural interest in Westminster Abbey, but further particulars will be announced.

Mr. Maurice B. Adams, one of the honorary secretaries, in moving a vote of thanks to Canon Duckworth, exhorted the students not to rest satisfied with their triumphs as prize-winners, but to continue to be diligent and earnest seekers after excellence in their respective walks of art and industry.

Canon Duckworth, in responding, endorsed this appeal, and the meeting terminated.

EYE, EAR, AND THROAT HOSPITAL, SHREWSBURY.

THE foundation-stone of the new Shropshire Eye and Ear Hospital at Shrewsbury was laid on the 9th inst. by the Earl of Powis. The institution was established sixty-one years ago, and has done much useful work. Its operations during recent years have been rapidly extending, and it has become necessary to give it what Earl Powis called "a new frame and a new material habitation."

The new building, which is being erected from the designs and under the superintendence of Mr. C. O. Ellison, architect, Liverpool, will cost, with site, nearly 10,000*l.* The site overlooks the Severn, and the building will be faced externally with pressed red brick and terra-cotta manufactured and supplied by Mr. J. C. Edwards, of Ruabon. Messrs. Treasure & Sons, of Shrewsbury are the contractors, and the amount of the contract is 6,294*l.* The ground floor is principally occupied by the out-patients' department. The remainder of the ground floor is occupied by day and dining rooms for male and female in-patients, matron's rooms, secretary's rooms, and serving-room, with large hall, staircase, and main entrance forming the central feature of the building. The first floor is occupied by wards having windows on three sides; four beds in each of two wards for males in one wing, and the same for females in the other wing, each having nurses' room, bath, lavatories, &c. The second or top floor is occupied by two wards of two beds each for special cases; an operating-room, with nurses' room, surgeon's closet, &c., in proximity thereto, although shut off to prevent sound passing. Kitchen and servants' departments occupy the remainder of this floor, excepting over one of the large wards, which has a flat roof and balustrade round for convalescents' airing-court. A covered airing-court is provided on the garden level, one-half of the building being carried on arches and vaulted floors, the nature of the site giving ample height for the purpose. All the water-closets are contained in an entirely detached block of building, connected with the corridors by light covered bridges, so constructed as to prevent the entrance of foul air into the wards from the closets.

ART AND SCIENCE AT SOUTH KENSINGTON.

IN the sixth report of the Commissioners for the Exhibition of 1851, which has just been published, they state that the work which had chiefly engaged their attention since the date of their last report has been the carrying out of a series of four annual International Exhibitions in the years 1871, 1872, 1873, and 1874, the loss on which,—13,912*l.*,—was something less than the loss of the interest on capital during their continuance. Dealing next with the relations of the Commissioners with the Royal Horticultural Society, the report points out that they deemed it to be their duty to decline to assent to any modification of the agreement of the 5th of April, 1876, by which it was provided that if the Society should fail to raise its income to the required sum of 10,000*l.* a year, they should have an immediate right of re-entry into the possession of the Royal Horticultural Gardens. Experience showed that the Society could not raise its income even to the amount of 7,000*l.* a year, and its lease of the gardens accordingly terminated at the end of last year. An account is next given of the completion of the Albert Hall and of the provisions which had been made for its permanent maintenance. Referring to the proposals of the Commissioners for the future, the report goes on to say that the Commissioners intend, with the concurrence of the Government, to erect a building to be used for the purpose of scientific and technical instruction, to contain laboratories for study and research, a collection of scientific instruments, and a library of works on science, and to transfer it to the Government on condition that it shall be used for those purposes; secondly, to place the Government in possession, on very favourable terms, of their permanent galleries; to lease to the Government free of rent the greater portion of the present Horticultural Gardens, as a place of recreation for the public; and to establish a number of scholarships with the object of aiding the development of scientific culture and technical training in the manufacturing districts of the country. To the foresight and wise counsels of his Royal Highness the late Prince Consort is attributed by the Commissioners the improvement in the artistic cultivation of the present generation as compared with those which preceded the year 1851. The provision now made by the Government, they add, for instruction in art might fairly be considered to be commensurable with the wants of the country. For science there was, however, no adequate provision, and they believed it to be their duty to promote its study and diffusion so far as their means would permit in a manner calculated to benefit all parts of the country. It was with that object that they had determined to found the science scholarships, and had made the proposal to the Government to establish on their estate institutions calculated to promote those studies in science which were so essential to the progress of industry. Among the growing competition of the world England could expect to maintain her high position among manufacturing nations only by a thorough training of her people in science and art.

INTENDED ROMAN CATHOLIC CHURCH, EDINBURGH-ROAD, PORTSMOUTH.

THE accompanying engravings illustrate externally and internally the selected design in a limited competition for a Roman Catholic Church, presbytery, and schools about to be erected at Portsmouth, for Dr. Danell, the Roman Catholic Bishop of Southwark.

The buildings have been arranged with the view of placing the church in the most prominent position, with the tower and spire forming the starting-point of the two ranges of frontages in Edinburgh and Alfred roads. The church will have three public entrances,—two in Edinburgh-road and one in Alfred-road; and will comprise nave, north and south aisles, transept, chancel, two side chapels, baptistery, Calvary, organ-loft, tower and spire, and sacristies. It is arranged to afford good accommodation for 1,100 persons.

The materials proposed to be used are Fareham red bricks, with Bath or Tisbury stone dressings, the roof being covered with dark tiles.

The roof of the nave will be vaulted in wood, and by adopting partly the principle of the hammer-beam roof, the effect of greater height will be obtained.

The following are the principal internal dimensions:—Length of nave, 144 ft.; chancel, 41 ft.,—total length, 185 ft. The width of the nave in the clear of the clearstory walls is 26 ft.; aisles, 13 ft. 6 in. each,—making, with the nave piers, a total width of 58 ft. 6 in. The transept is 25 ft. wide and 72 ft. long. The width of the chancel is 24 ft. 6 in. The height from the floor to the ridge of the nave roof is 68 ft.

The height of the spire, exclusive of the vane, is 190 ft.

The presbytery is placed so as to conveniently serve the chancel end of the church, to which access is obtained by a cloister leading to the sacristies. Accommodation is provided for three priests, and by the future addition of another story further accommodation for three more priests is obtainable.

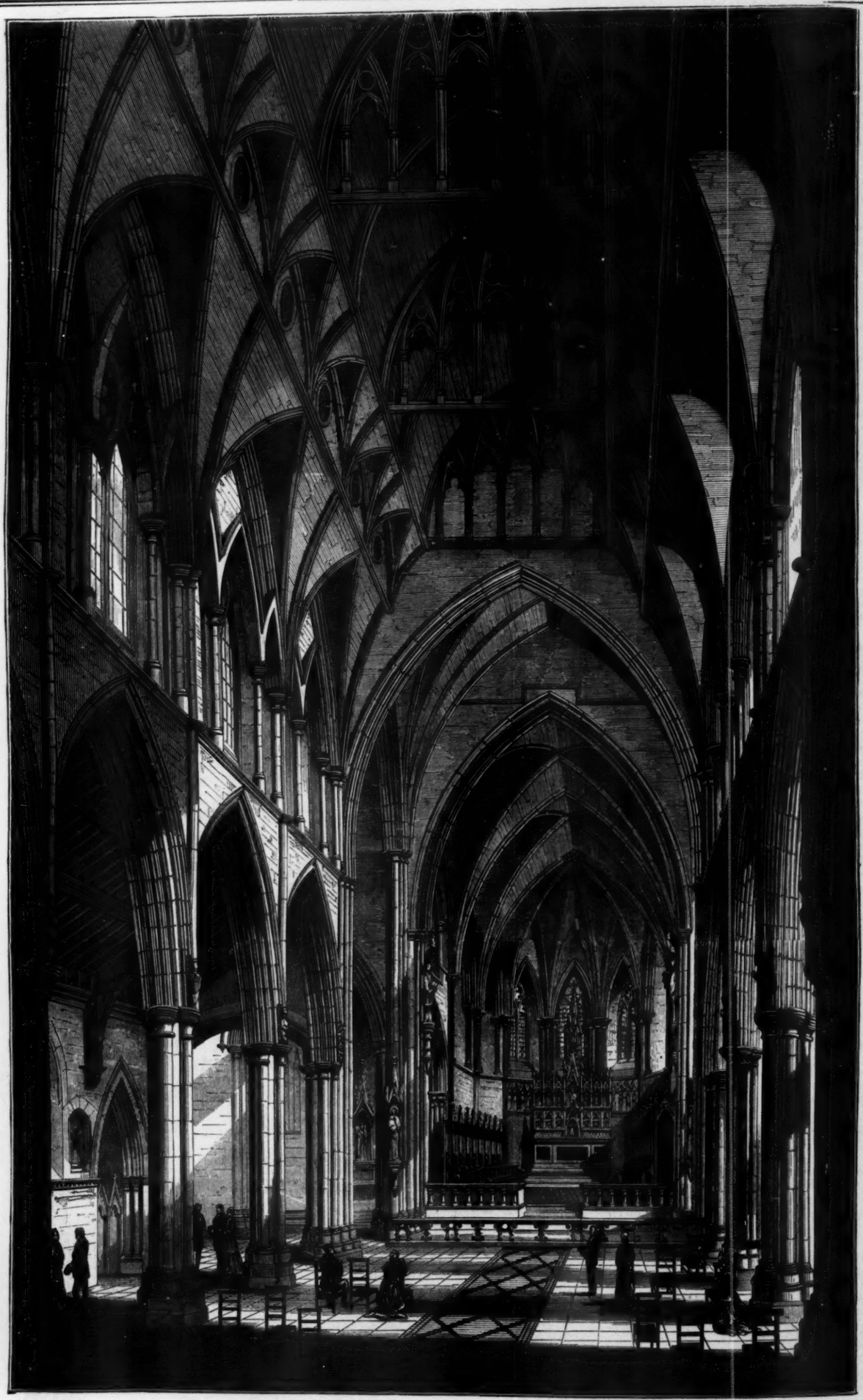
Large schools for 700 children are also to be erected on the site contiguous to and in connexion with the church.

Messrs. Patman & Fotheringham's tender for the school buildings has been accepted, and the foundations are already laid in.

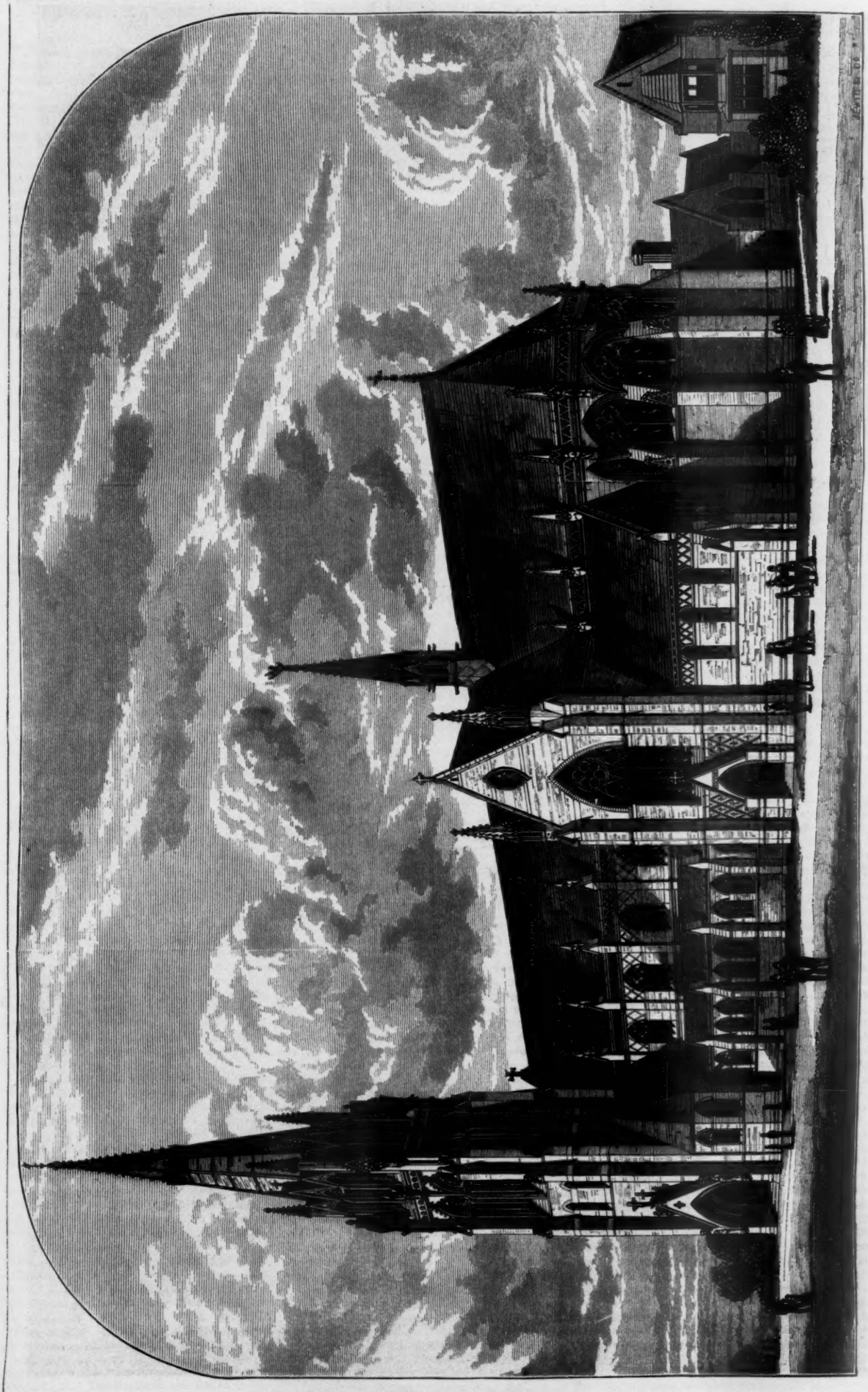
The working drawings and estimates for the church and presbytery are in course of preparation.

The designs have been prepared by Mr. J. Crawley, of No. 2, Bloomsbury-square; and the clerk of works appointed is Mr. Broomfield.

Mercers' Hall, Cheapside.—A correspondent complains that the entrance to Mercers' Hall, which was taken down some time ago, is not being re-erected, as promised. We know none of the circumstances, and cannot interfere.



INTERIOR OF PROPOSED (R.C.) CHURCH, PORTSMOUTH.



PROPOSED (R.C.) CHURCH, EDINBURGH ROAD, PORTSMOUTH.—MR. JOHN CRAWLEY, ARCHITECT.

SHROPSHIRE ARCHÆOLOGICAL SOCIETY.

NEARLY three years have passed since the formation of this society, and it appears to be making rapid strides in prosperity and usefulness. Its roll of members continues to increase, and its finances are in a satisfactory condition. The third annual excursion took place on the 9th inst., to Berrington, Pitchford, Acton Burnell, and Condover. Starting in carriages from the Town Museum, Shrewsbury, at half-past ten in morning, the party proceeded by way of the town walls, the Abbey-foregate, and Wenlock-road, to the site of the Weeping Cross, the terminus of the procession of ecclesiastics, secular and regular, with the bailiffs and the incorporated trading companies, on the festival of Corpus Christi. The cross is now demolished, but fragments may be traced in some of the adjoining fields.

At *Berrington*, the church was first visited. It is dedicated to All Saints, and dates from the fifteenth century. It has recently been restored, and comprises a nave and chancel, with western tower similar to those of St. Julian, Shrewsbury, Cound, and Battlefield. On a corbel in the tower are the arms of Barre. The principal archæological feature, however, is the fine effigy in wood, as well as the "leigers" in the floor of the nave to the old families of Pontesbury and Owen, once chief landowners in the parish, well known in the annals of the town of Shrewsbury, and ultimately united in one family as Pontesbury-Owen.

Pitchford was reached after a drive of four miles. The little Church of St. Michael, which adjoins the hall, was first visited, and the oaken figure of a Baron de Pycheford, an effigy of a crusader in chain armour, was examined. An engraving of this monument is to be found in Mr. Eyton's book, and Mr. Anderson, in commenting on it, remarks that "tradition says the figure represents Sir Hugh de Pitchford, yet heraldry points rather to Sir John de Pitchford, who died in 1285." In the fifth of Edward I. (1277) John de Pycheford held the manor, but in 1322 it had passed to Walter de Langton, Bishop of Coventry and Lichfield. The alabaster monuments to the memory of several members of the Ottley family, who owned the estate for 334 years, also attracted attention. Lady Louisa Cotes, at present residing at the Hall, kindly permitted the visitors to inspect the interior. It is a fine specimen of the half-timbered mansion, erected probably early in the sixteenth century. It is supposed to have been built by William Ottley, Sheriff of Salop in 1499 and 1513. A long gallery leads to the drawing-room, and the walls of this are covered with paintings and rare and curious engravings. The bituminous spring, from which the place derives its name, was also visited. Fortunately, although the coldness of the weather militated against the yield of pitch, a few specimens were floating on the water at the time of the visit, and these were secured by the members of the party. Camden compares the scum of this well with matter found in Lake Asphalites, in Palestine, and says there is a spring of the same kind in Samosta. The site of the ancient corn-mill having been inspected, the party resumed their journey. Watling-street runs from north-east to south-west through this parish for about two miles, and a portion of this Roman road was traversed by the brakes.

At *Acton Burnell*, three miles further on, the first place visited was the venerable church dedicated to St. Mary. The Lee Chapel on the north side contains monuments of the Lees of Langley, and the fine brass of Sir Nicholas Burnel, Knight, Lord of Holgate and Acton Burnel, 1382. It is figured in Boutell's "Monumental Brasses." There is also a fine alabaster stone in an excellent state of preservation, with two recumbent figures under a rich canopy of the same material. On a slab affixed to the wall is the following inscription:—"*Hic jacet corpus Richardi Lee, Armigeri, qui obiit 27 die Maii anno dni.* 1591." Here also are the remains of a stone coffin, besides several monuments to the Lees and the Smythes, and over the centre of the arch is a helmet, with crest (a squirrel). The next visit was to the ruins of Acton Burnell Castle. They form a parallelogram with a square tower at each angle. The Castle was built by Robert Burnell, Bishop of Bath and Wells, Lord Treasurer and Chancellor, about 1282. The Castle is celebrated in history as having been the place where sat the Parliament of Edward I., 1283. The celebrated Statute of Acton Burnell was passed here, and is still in force. It appoints the mode in which a statute of merchants is made, the manner of valuing goods for the payment of debts, the imprisonment of debtors, &c. It may be remarked that the Barons, then the House of Peers, sat at the Abbey Church, Shrewsbury, during this session of Parliament. This hall is 157 ft. long by 40 ft. wide.

Condover, the last place visited, was reached after a long drive. The parish church, dedicated to St. Andrew, has been completely restored. The history of this parish is most interesting. William I. gave Condover to Roger de Montgomery, who gave the church to Shrewsbury Abbey. It was seized by Henry I. Henry III. granted it, in his eleventh year, to his sister, the Princess of Wales; then the Hastings family had it; then Robert Burnell, Bishop of Bath and Wells, bought it, and it passed to the Lovells. Lord Viscount Lovell forfeited it to the Crown, and Henry VIII. granted it to Rich. Cornwell for life, and afterwards to Henry Knyvitt and his heirs male. George and John Isam sold it to Thomas Owen, and from them it has descended to the present owner. The church is rich in memorial monuments to various members of the Condover family since the middle of the seventeenth century, about which time the church is believed to have been built. The most important of these are contained in the chapel on the north side of the chancel, and the oldest one is a large mural monument affixed to the wall, occupying most of its space. It was erected in 1641. The design is Grecian, and consists of four spaces, two above and two below, separated by black marble pillars supporting circular arches, underneath each of which is a kneeling figure. The two lower figures represent Judge Owen and his son, Sir Roger; the two upper ones his daughter, Mrs. Jane Moreton, by whose orders the monument was erected, and her husband. The whole is surmounted by an emblazonment in relief of the family arms. Beneath the east window of the chapel stands a monument in white marble, said to be by Roubiliac, representing in life size Roger Owen and his daughter. There are several other monuments, comparatively modern, in memory of various members of the family of the last and present centuries, and within the sacrarium, under an arch in the south wall, is a well-preserved alabaster altar tomb, with two recumbent figures, representing Colonel Scriven, of Frodesley, an eminent Royalist and friend of Charles I., and his wife. There is an aumbry in the north transept.

On returning to Shrewsbury, the members dined together at the Lion Hotel, the Rev. W. A. Leighton in the chair.

NEW RAILWAY STATIONS IN PRESTON AND GLASGOW.

FOR some years past a new railway-station has been in course of erection in Preston, which, when finally completed, will be one of the largest in England. It extends under Fishergate, the principal street in the town, occupying several acres both north and south of that thoroughfare, and an enormous sum has been expended in the purchase of land for the rebuilding and enlargement of the station. The greater portion of the new station is to be opened next week. The part to be opened contains several new lines of metals, a new approach-road from Fishergate to the station, also new booking-offices, about one-half of what has been named the great Highland platform, together with large new dining and refreshment rooms, and also what is called the waiting-room block, which includes the station-master's and other offices. The station has been erected at the joint expense of the London and North-Western and Lancashire and Yorkshire Companies.

The report of the Caledonian Company, which has just been issued in anticipation of the half-yearly meeting, states that during the past half-year no fewer than five new stations, erected by the company, have been opened. These include the Bridgetown and London-road Station, opened on April 1st; the Clyde-place Station, opened on July 1st; the joint station at Bridge-street, opened on July 12th; the Central Station in Gordon-street, opened on August 1st, for the western district; and on the 1st of the present month that portion of the Central Station for the English and Edinburgh districts.

THE MOORE MEMORIAL

IN BROMHAM CHURCH, WILTSHIRE.

ON Saturday last, September 13th, a memorial window was placed in the church at Bromham, where the poet Moore, his widow, and three of his children, are buried. It contains this inscription:—

"This window was placed in this church by the combined subscriptions of 200 persons, friends or admirers of 'the Poet of all circles and the idol of his own,' THOMAS MOORE."

It is the west window of the church that has been filled; the east window is a memorial window to the estimable wife of the poet, placed there by her nephew, Charles Murray (recently dead), who considered it right that a "companion" should be provided by the public: that duty the public have now discharged. The window was designed and executed by Mr. W. H. Constable, of Cambridge, and represents the "Last Judgment." The memorial was originated and brought to this successful issue by Mr. S. C. Hall, who deserves the hearty thanks of all admirers of the poet, and we are glad to hear that Mr. and Mrs. Hall were both present at the opening. Mrs. Hall, indeed, removed the curtain from the window. They are among the oldest living friends of the poet and his wife, dating friendship and intercourse with them much farther back than half a century. The list of subscribers is a remarkable one.

SUNDAY RECREATIONS.

MR. EDITOR,—It was with unfeigned pleasure I read some very sensible and well-written letters in last Sunday's *Observer*, signed "Vox Populi," "Portcullis," and "Wet Skin."

"Vox Populi" enters more especially into a subject which has been now for some time agitating the public mind, and to which men of high position, and with arduous daily work of their own to perform, have yet devoted much of the little leisure time they have, and all their eloquence and influence. Notably amongst them we find one of our principal surgeons, Sir Henry Thompson, who doubtless urges the influence that rational pleasures, rational recreation, have on forming the *mens sana* that is so essential to physical health.

Then there is Sir Coutts Lindsay, who not only talks but acts, and throws open his fine rooms and fine collection for a brief space to the masses; and I also find, sir, your name, in conjunction with others of note, eagerly advocating a new era.

Too long has lasted the fell sway, the Circe-like power, drink exercises on the mass, and it is high time for men of power and influence to be no longer lukewarm, but to remove by every means in their power the blot this vice is on our land and on our people. To every poison there is generally an antidote; to every attraction a counter-attraction. And without insulting or offending what we consider an ultra-Puritanical spirit, we would, as we respect even a prejudice if it is the honest expression of a man's conscience, try and prove we are not opposing religion or religious views, but, on the contrary, working hand in hand with those who would make the Sabbath a day of simple piety, earnest thanksgiving, and yet of innocent amusement; an oasis in the seven days of toil, an incentive to put by something towards the spending such another day, opposed to the tawdry glitter of the gin-palace, bad tobacco, and worse spirits who would give them museums, offering for inspection the treasures of past and present ages, the produce of far-away lands, and that would be as the tale "Robinson Crusoe" to many a man who will never in his life make a longer voyage than within the limits of the suburbs of London; pictures and galleries of sculpture, where the contemplation of the beautiful in art would entice men to turn from the coarser and ruder scenes of life. Why should there not be good music in the parks, or in these very museums? "Music," Congreve says, "hath charms to soothe the savage breast." Would it not infuse (passing by the superior class of workpeople, to whom appreciation of these things comes naturally), even into natures that are debased merely because from their birth they have lived in an atmosphere of dirt and degradation, some softening influence, some aspirations after better things?

But how is this to be done? During the week-day we have but little hold on the people; in the evening it is true they can, if so inclined, go to the theatres, and there at the hands of men like

Mr. Irving and other good actors, have a rare intellectual treat offered to them. But with the Saturday's wage comes the Sabbath-day of temptation, not looked on as good people would have it,—as a day of entire rest, entire devotion to religious exercises,—but a day of enforced idleness, which, if he cannot be induced to spend entirely within a church (and our climate precludes any one counting with certainty on any Sunday being actually a fine day for a stroll in the park), leaves a man,—if he will not go to three services, only the contemplation of the humble,—generally very humble,—walls, he has gazed on for six consecutive days. And it thus often ends by his drifting off to where other loungers like himself do congregate, where club meetings, where some knavish companion,—a blatant ignoramus on the matters he is holding forth about,—is yet clever enough to lead his hearers like sheep; and to cozen the senses out of their heads and the money out of their pockets. Oppose to this the counter influence of a religion—not carping, not gloomy, not holding before the eyes unknown terrors,— but a religion of love, of mercy, of tender forgiveness, by making "their lives less ugly and more beautiful." The more refined their tastes grew the more naturally men would turn to offer some meed of thanksgiving in the morning, if they had before them the prospect of an afternoon of rational enjoyment. I would not only have the picture-galleries thrown open, the museums with their treasures of past and present times, but a reading-room in the latter, with the publications of the day; good music also in some room of the museum, and in the parks. All this for only two or three hours in the afternoon; we ask for no more. And that the work might not press too much on the *employés*, the staff on duty to be changed every alternate Sunday. And I also think, Mr. Editor, if men of the standing of your colleagues, or yourself, would once a month devote an hour to giving in the reading-room at one of these museums, or at the Albert Hall, a lecture on some interesting subject, you would help to strengthen your influence for good. Explain clearly to the people what this new movement means, and they would feel more inclined, I think, after their tea to finish their evening in a well-lighted church than to return to coarser pleasures. It would also help to draw still closer the bond between gentle and simple. Those whom poets term the "brawny sons of toil" really like being brought in contact with what we call in vulgar vernacular a "swell," for they know how ready this class are when the time comes to devote their higher advantages to them. The war telegrams daily prove through what storm of shot and shell the "curled darlings" of a London ball-room will ride,—how they will cheerfully lie down to rest with no canopy but the star-gemmed heaven, no bed but the rain-soaked sod,—how, without wavering, they will ride on to meet the death that buys us victory, so that England and England's people may live great and free.

The statesman is at his brain-work into the far hours of night. The doctor and philosopher face death in all its forms so that knowledge and science may be more widely diffused, and that the humbler classes may profit by it. Give these classes, then, this one chance more. I do not think it would be abused. We are not a nation likely to run into extremes, or ask for the Sunday of large Continental cities (though that of Continental villages is harmless enough). We are a reflective, an energetic, and a healthy people, and though we are accused by foreigners of taking our "pleasures sadly," I do not think a more naturally "jolly" people than the English exist,—a little too fond of doing the "Rule Britannia" business all over the world, and too little careful of other people's susceptibilities; but an essentially kind-hearted and sensible people.

The only danger is in having the vigour and activity of the mass mis-directed. So it is for men of master-mind and master-influence to take the helm in hand and be the architects of some vast system of reform,—the amelioration of existing abuses,—or the piloting of their newer theories through the surf of opposing prejudice. And yet each one of us can, like the humble workmen of the pyramids, assist in the construction, each place a brick, that shall help to form the mighty whole; and though it would be Utopian to suppose the belief of George Dawson "Portcullis" alludes to will be realised in our day, "that the time would come when the highest in the land would not be happy till the lowest was lifted out of his misery," still a chance will have been given to thousands, and if they will not take it the blame cannot be laid at the door of the other class, who, I do not wonder, sometimes get weary of well-doing, or muse in a melancholy manner on "man's ingratitude." One ought to put the expectation of gratitude on one side, and do the right thing, because the thing in itself is the right thing to do.

SUNSHINE.

SALARIES OF BOROUGH SURVEYORS.

AT a recent meeting of the Huddersfield Town Council, Mr. Councillor Haigh, in moving for the appointment of a borough surveyor who should be required to devote the whole of his time to the duties of his office, quoted returns which had been made by thirty-six other towns in reply to questions as to the salaries and duties of their borough surveyors. Of the thirty-six towns enumerated below, thirty-one required the whole time of their surveyors. The five towns which did not make such a stipulation were Brighton, Coventry, Chester, Nottingham, and Worcester, which, he said, paid such small salaries * that they could not obtain men worthy of the position without allowing them to take private practice. Mr. Haigh then read the following statistics, giving the population, acreage, rateable value, and salaries of the borough surveyors of the several towns mentioned:—

	Population.	Acreage.	Rat. Val. £.	Salary £.
Ashton	37,725	1,391	122,794	200
Barnsley	30,000	2,385	88,167	250
Barrow-in-Furness	40,000	16,503	187,000	350
Blackburn	95,000	4,071	270,000	650
Bolton	105,000	2,378	367,000	400
Bradford	191,000	7,221	857,000	500
Brighton	104,000	2,591	565,706	500
Burnley	55,500	4,063	119,325	300
Burton-on-Trent	30,000	4,025	140,000	300
Cardiff	80,000	7,000	357,374	500
Chester	35,232	2,960	140,642	200
Coventry	40,000	1,600	117,000	250
Darlington	32,000	3,909	159,117	350
Derby	80,385	3,400	260,000	500
Exeter	37,000	1,822	165,000	500
Halifax	70,000	3,768	270,000	400
Leeds	311,000	22,000	1,083,654	800
Leicester	130,000	3,960	396,022	700
Lincoln	31,000	10,689	97,227	300
Middlesbrough	54 000	— —	201,000	500
Newcastle	147,000	5,326	709,430	1,000
Northampton	55,000	1,520	140,753	300
Nottingham	190,000	10,000	600,000	1,500
Oldham	111,318	4,665	467,954	350
Oxford	35,000	——	156,177	260
Preston	87,600	2,820	262,150	600
Rochdale	71,000	4,180	245,934	400
Salford	180,000	5,170	792,974	700
Sheffield	289,000	19,651	915,877	600
Shrewsbury	25,000	3,470	106,500	380
Staleybridge	23,124	783	——	170
Stockton	35,000	1,189	144,484	300
Wolverhampton	75,000	3,440	197,000	500
Worcester	33,226	1,284	118,405	100
York	43,796	2,720	168,703	400
Huddersfield	80,000	10,476	272,723	750

BOROUGH SURVEYORS.

SIR,—Much has been said during the past few weeks about borough surveyors and the unfairness of such appointments as are now occasionally made, and as so-called "trained" borough surveyors appear to complain, I am anxious to know what is your opinion, as well as the opinion of your correspondents, on the following conduct of a "trained borough surveyor."

Some time ago a vacancy occurred in a large town for a borough surveyor; several candidates applied for the post, which was ultimately given to a comparatively young man, who, however, in order to further his chances of success, stated in his application that he was four years older than he actually was. I should like to know whether such conduct is legitimate. To me it appears barefaced dishonesty, and I should be glad to hear if such a practice has been known before.

FAIR PLAY.

*** No answer can be needed to this inquiry. Proof of such an act would damage, not to say damn, a man through life. It is to be hoped, and we are disposed to believe, that such an act is not common.

* We quote the figures as given in the *Huddersfield Chronicle*. The statement as to the salary paid at Nottingham does not appear to bear out Mr. Haigh's remark.

THE QUALIFICATIONS OF SURVEYORS.

SIR,—Having taken some interest in the discussion which has been so freely ventilated in your columns with reference to the qualifications of surveyors, I am somewhat pleased that the other side of the question has been opened out, and am surprised that it has not been done previously.

According to the arguments of some of your correspondents, they wish to imply that a scientific knowledge is the fundamental principle which ought to guide public bodies in reference to the selection of town surveyor; but I find, from experience, that a good practical knowledge, based upon a scientific one, is far preferable, and can be much more utilised in the general ordinary work. I admit that in rural districts men are appointed who are wholly incompetent for the offices they occupy, but in towns or boroughs of any note whatever, such appointments are open to competition, in which qualified and unqualified candidates enter, and in the generality of cases those are chosen who are duly qualified for the post, and have been trained in a surveyor's office. In many surveyors' offices they receive no sanitary training whatever, and are simply acquainted with the taking of surveys and other ordinary work; so the fact of being a pupil with either an architect or a surveyor is no criterion to go by.

Knowledge is acquired only by application and perseverance; and no matter how great the premium and the practice of the architect, if the pupil will not investigate for himself, he will never excel. I have known, and know at the present time, builders who employ clerks at salaries from 50*l.* to 200*l.* per year, who have been pupils in architects' offices; but, compared with the builder, they are "dummies" as to any real practical knowledge.

But I ask, sir, how it is that at the present time so many of our architects and engineers are placing their sons for a term of years in the workshops previous to their entering the offices? Simply because the parents have learnt experience from the past, and are desirous that their own sons should not be placed in the same difficulty as they themselves are, and have been, and consequently avoid those architectural and engineering "bungles" which daily occur.

I consider that some of your correspondents are similar to the dog in the manger,—not qualified, either through misconduct or want of ability, for posts of trust, and consequently envious of those who are. If they would only inquire as to whom we are indebted for some of the greatest achievements in the architectural and engineering world, they would no doubt pause before inditing further with reference to the matter. The majority of the present generation are mere copyists of those who did not receive that scientific training, except through their own perseverance.

I have seen pupils take subordinate positions in offices, owing to their deficiency in practical knowledge; and I am fully persuaded that a young man entering a builder's or engineer's workshop with the intention of becoming an architect or an engineer, and during that time advancing himself in private study, will eventually outrun the man who has merely passed through the ordinary office routine; and I shall always endeavour to procure such for my own use, knowing that their services are far preferable.

A PROFESSIONAL.

Rainfall in 1879.—A table which exhibits the rainfall at Helenslea, Child's Hill, London, N.W., prepared by Mr. A. J. Woodhouse, when it is kept in view that the average rainfall in the London district is 25 in. per year, shows that for the eight months of 1879 now past, we have had already 3½ in. above the usual average of the whole year. 1878 and 1877 were both very wet years, both slightly exceeding 30 in. If only the same fall occurs in September, October, November, and December as was registered last year in the corresponding months (a fall considerably within the average), then we shall have about 36 in. for 1879. It has been a frightful year in this respect; the loss caused by it is immense. But, on the other hand, it is long since so healthy a year was known. There is always a compensation to be found if looked for.

THE TRADE-UNION CONGRESS IN EDINBURGH.

THE twelfth annual Trade-union Congress commenced in the Oddfellows' Hall, Edinburgh, on Monday morning, the 15th inst. As many as 115 delegates were present, four of whom were females.

The societies represented at the congress are ninety in number, and they include in their membership 541,892 working men and women. The following are some of the societies represented, with the names of the delegates, the figures giving the number of members belonging to each society named,—

Bricklayers' Operative Society, 6,510, E. Coulson, London; Operative Bricklayers of Scotland, 600, Thomas Macduff, Glasgow; United Operative Society of Bricklayers (Leicester Branch of Manchester Unity), 250, J. H. Main, Leicester; Carpenters and Joiners, Amalgamated Society, 17,000, J. D. Prior, Manchester; Associated Carpenters and Joiners of Scotland, 8,110, W. Paterson, Glasgow, and J. Thom, Edinburgh; Carpenters and Joiners, General Union, 10,085, J. Lindsay, Manchester; Amalgamated Society of Engineers, 45,000, J. Burnett, London; House Decorators' and Painters' Amalgamated Society, 800, G. Shipton, London; Ironfounders of England, Ireland, and Wales, 12,500, Daniel Guile, London; United Operative Masons of Scotland, 11,821, T. Walker, Edinburgh, and John Carmichael, Edinburgh; Mill Sawyers, United Society of Liverpool, 60, W. Warwick, Liverpool; Masons' Friendly Operative Society, 24,000, Henry Broadhurst, London; General Alliance of Operative House-Painters, 700, Thos. Sharples, North Liverpool; National Operative Association of Plasterers, 8,000, C. Williams, Birmingham.

Mr. J. D. Prior, of the Amalgamated Society of Carpenters and Joiners, presided at the opening of the proceedings, and delivered an address in his capacity of chairman of the Parliamentary committee. He defended trade-unions, averring that if working men had suffered no wrong, they would never have found in combination a mode of redress. He trusted that the congress, whose members knew that trade depression meant something more than the curtailment of luxuries and the diminution of accumulated capital, would ascertain whether something more than had been done could not be done to alleviate the suffering and privation which prevailed amongst those whom they were delegated to represent. From figures compiled by Mr. Guile, he found that during the year 1878 four societies, numbering in the aggregate 90,000 members, had expended in benefits to distressed members during the year no less a sum than 260,000*l.*; and he could not help feeling astonishment at the vast amount of poverty and distress which had been alleviated by the unions, and the enormous benefit which had accrued to the ratepayers of this country by the establishment of the detested and much-abused trade-unions. But, he asked, was it really an absolute necessity that every few years large multitudes of the people should, through no fault of their own, be reduced to such a destitute condition? Opinion was that much might be done to improve the social condition of those whom they represented if they would only enlarge the area of their political action, and unitedly endeavour to remedy some of the evils by which the people of this country were impoverished. Their action as a congress had hitherto been mainly political, and through the influence used by the trade-unions bad laws had been repealed, and questions of great national importance in which they had taken the initiative had demanded and received the attention of the Ministry, the Legislature, and the country. They required to take a few great questions out of the area of party politics, the questions on which working men, both Liberals and Conservatives, could unite, and they could accept no candidate for party honours unless he was prepared to unite with them in endeavouring to remedy the evils of which they complained.

On the motion of Mr. Thom, joiner, Edinburgh, seconded by Mr. F. W. Evans, Mr. David Gibson, chairman of the Edinburgh Trades' Council, was elected president of the Congress, and at once took the chair in place of Mr. Prior.

Mr. Henry Broadhurst, secretary of the Parliamentary Committee, then presented the annual report of that body, which at some length reviewed the legislation of the past session as affecting the working classes. The Committee expressed regret that no progress had been made with the Employers' Liability Bill in the past session of Parliament. Mr. Macdonald's Bill, if passed into law, would not establish any exceptional legislation in favour of workpeople. On the contrary, it would merely remove special exclusion from the protection of the law. This Bill, originally proposed by the Parliamentary Committee, and so ably taken in charge by Mr. Macdonald, was the only measure which proposed to give the workman the same protection as was now enjoyed by other people against the carelessness and neglect of an employer who endeavoured to carry on his works with inefficient or unskilled labour or defective plant. Such employers, the Committee was convinced, formed but a small minority of their class, but it was nevertheless necessary to protect their workpeople against this recklessness and disregard of the safety of those employed. In the "General Remarks" with which the Committee conclude their report, they say:—"During the past year labour disputes have been far too numerous for special reference to be made to any particular cases. Desperate struggles have been entered upon, and in some cases maintained, for the defence of the existing hours of labour. That numerous attempts to destroy the nine-hours system should be made does not surprise us; we therefore congratulate the trades upon the large measure of success they have achieved in this direction. Whatever is suffered in the form of reduced wages, the existing working-hours must be defended, and where they are surrendered for a time, the first work to be done with the return of prosperity must be their re-establishment. Reduction in wages has been almost general in every trade. In some cases circumstances may have given reason for the demands made upon the workpeople, but in a large number of cases there has been no just cause. Many employers have reduced wages upon no other ground but that the opportunity served them. . . . . The Parliamentary committee and the congress have ever been the advocates of Reason *v.* Brute Force; but if, in time of depression, employers recognise 'might' as the only 'right,' we may well despair of the future relationship of capital and labour. The events of the past few years offer food for reflection as to the present system of trade societies in rendering assistance to each other in times of difficulties, and the question is raised whether many of the unions do not need considerable reorganisation, not only in administration, but in regard to an increase in their contributions. There is no doubt of the necessity of a much closer unity of action, not only amongst kindred trades, but amongst all trade associations, if unionism is to be a real power in the land. The larger the scale upon which it is practised the better it must be for those affected. At the same time, we cannot ignore the obstacles in the way of a complete form of federation of all trades for all purposes, but there does not appear to be any reason why nearly all the unions should not unite for the common purpose of defence in cases of attack on any established conditions of labour. On the contrary, we are of opinion that such a scheme is practicable, providing those forming the alliance would submit to the wholesome discipline of an unbiased central board of management. This would give to those connected with it not only material assistance, but the advantages of a valuable experience on a broader scale than can possibly be obtained from any one trade, however great their numbers may be or however wide their ramifications. The present severe depression of trade, and the consequent suffering amongst all classes of workpeople, will force upon these annual gatherings a consideration of the broader and higher questions which affect the material condition of the working population."

On Tuesday morning the president, Mr. Gibson, delivered an inaugural address as a preliminary to the real work of the congress. He complained that recent experiences had shown employers to have a strong aversion to any reasoning on the question of wages, which, taken with the fact that in the great productive trades—such as coal, cotton, and iron—there was a determination to reduce wages to the lowest rate, made the industrial outlook sufficiently ominous. The miners' dispute in the Durham district, among others, might be referred to as an illustration of this intolerance of conciliation now so prevalent. Indeed, all over the country instances could be found of strikes wantonly provoked by a tyrannous enforcement of terms such as was there sought to be inflicted. The employers, in their power, had evidently forgotten their old love for arbitration. The belief had taken possession of their minds, instead, that they could do as they pleased, and so they could; but this was founded upon the idea that working men could not do as they pleased too. They calculated that working men would be deterred by the censures of the Press from doing as they had been done by, if, in time to come, the example set by the employers should be thought worthy of imitation. There was no warrant for believing they looked so far forward, but, by the time it had been discovered how little the men could live and work upon, they might realise the fact that the relations between capital and labour had by their shortsighted policy been unnecessarily strained and materially changed for the worse. If there was any danger of foreign competition—that wolf of British commerce about which there arose periodically such nervous panic—it was more likely to be successful in a contest with industries conditioned such as these were, than where more generous treatment obtained. It was to be regretted that so much of the spirit of antagonism to trade-unions should have been evinced by nearly all who had written on the subject of trade depression. With somewhat portentous unanimity, they agreed to assign a more or less prominent position in the sometimes long list of causes to the action of the working classes. The many charges that had been thus made against them had over and over again been refuted in past congresses, and it would be thrashing already thrashed straw to repeat the work. Regarded at one time as one of the principal causes, they had now become chargeable with the minor offence of shortening the time during which commerce continued prosperous, and in the same way prolonging the present depression. This had been done by strikes. It was thus assumed that the collapse of trade which occurred in America in 1873 was caused by the workmen of this country, for to such an absurdity was this statement reducible, and that the consequent depression, universal in extent though it was, could never be got rid of until the workmen agreed to take for the future what wages capitalists thought fit to give. By some, again, the chief cause is attributed to the condition of the schools and workshops of the Continent, and in a pamphlet published in Edinburgh recently (which for the information it gave concerning the state of technical education on the Continent was very valuable) it was quietly assumed that some of these countries had an advantage over this in their manufacturing industries. The ignorance of the British workman had always been regarded as an unknown quantity by his candid friends, and those gentlemen who advocated measures designed to instruct him with a technical knowledge of the trade he belonged to were desirous that the same opportunities should be afforded him here as were supplied on the Continent. In these schools diplomas were granted, and the advantages of having secured the education necessary to be in this position were stated to be that the services of those who obtained them were much sought after by employers, and that they were everywhere able to demand higher wages, because the work was of more value. He wished not to be misunderstood nor taken to mean anything that would imply an underrating of the importance and value of education of this kind to all workmen; but it must be apparent to any one who had the slightest acquaintance with the conditions of employment of this class of men in Britain that this education, vouched for as it might be by however many diplomas, could not be relied upon to bring them promotion of any kind. In the railway services of the country, for instance, it was well known that engine men and drivers, with the diploma of long experience, were too often suspended or dismissed for the most trivial faults, and sometimes no fault at all, in order that their wages might be reduced. The effect of this special knowledge in these countries had not been felt in any part of our trade, and could not be ranked as one of the causes of its depression. Speculative loans to bankrupt States were of the number, but, to his mind, the real cause was to be found in the withdrawal of millions of men from the ranks of productive industry, and imposing upon the people the herculean task of supporting armies of idlers, who, like locusts, consumed the fruits of other men's toil.

A vote of thanks was accorded to Mr. Gibson for his address; and, on the motion of Mr. Daniel Guile, the report of the Parliamentary Committee was adopted. Other matters were discussed (not without acrimony), and the Congress adjourned until Wednesday. Of its proceedings on that day, and on Thursday and Friday, we may have more to say next week.

PUBLIC IMPROVEMENTS IN SOUTHPORT.

The Corporation of Southport, having spent 130,000*l.* in carrying out a new and thorough system of drainage, now propose to spend something like 64,000*l.* in the erection of a new market-hall and the extension of the promenade in a north-easterly direction. For this latter purpose they are reclaiming 41¼ acres of the sea-shore, and have paid 8,000*l.* for the right of ownership of the land. The work of forming the promenade is already in progress, and it is expected (according to the *Manchester Courier*) to be completed about December, 1880. The extension will be carried for about half a mile towards the north-east, and will then take a curve inland and join the roadway near the Hesketh Park. The land behind the embankment, which is called the reclaimed land, will be filled in so as to be available for building purposes. The contractors for the works are Messrs. Gripper & Bayliss, of Nottingham and Hull, who have undertaken to form the promenade fer the sum of 20,752*l.*, and to lay out and sewer the land behind ready for the commencement of building operations for 11,071*l.*, making a total of 31,823*l.* To this must be added the 8,000*l.* paid for the right of ownership to the land, which raises the full cost of the works to about 40,000*l.* A portion of the 41¼ acres of land inside the proposed promenade has already been sold at 7*s.* 6*d.* per yard to persons who intend to erect houses thereon, and if the corporation can only manage to obtain the same price for the remainder they will receive a total sum of 53,000*l.*, so that the undertaking will in this way be made to more than pay for itself. The promenade is being formed of sand,—which is conveyed from Birkdale,—and will be carried to a height of 12 ft. The front sea-wall will consist of concrete, the foundations being 3 ft. thick, and extending to a depth of 6 ft. below the level of the shore. It will be taken upwards on the side of the promenade on a curve at a thickness of 1 ft. 6 in. The embankment itself will be 60 ft. in width, 25 ft. being devoted to a marine drive, another 25 ft. to the promenade proper, and the remaining 10 ft. will be laid out as a footpath alongside the houses. It is to be asphalted over its entire extent, and a dwarf wall 1 ft. 6 in. high, surmounted with an ornamental iron railing, will be carried along the side nearest the sea. Plans have already been drawn for the laying out of the reclaimed land, and it is intended that seven streets shall be formed. Mr. William Crabtree, borough surveyor of Southport, is the engineer for the works, and they are being carried out under his superintendence.

The New Market Hall is being erected by Mr. Thomas Bridge, builder, of Burscough, at a cost of 23,800*l.*, from the designs of Messrs. Mellor & Sutton, architects and surveyors, London-road, Southport, and the late Mr. John Ducie, C.E., London. It stands upon a site containing about 4,550 square yards, being bounded on three sides by streets, viz., East-bank-street on the north-east, Upper King-street on the north-west, and Market-street on the south-west. The market will be divided into three parts by walls about 12 ft. high, the first or main portion being for butchers, poulterers, greengrocers, and provision dealers; the second for fish-dealers; and the third being devoted to a wholesale market. Direct access from one part to the other is obtained by means of wide archways. Thirteen main entrances have been provided, leading into avenues five yards wide, from which cross passages, four yards in width, are taken, thus securing a front position for each stall. All the stalls will be lined to the height of 5 ft. with white glazed firebricks, and will each be provided with an American cooking-stove, and also with town's water. The fish-stalls will be fitted with marble slabs, and will each have an earthenware sink and drainer. The roof of the market is divided into five equal spans of about 38 ft. each, the centre span being curved, and the whole supported by strong cast-iron columns, with enriched capitals and lattice girders. In the centre of each bay of the roof is a lantern light running almost the whole length. Externally, the architecture of the market is Classical. The façade is to be of Longridge stone, the central feature to East Bank-street being treated with fluted Corinthian columns, above which will spring a curved dome covered with zinc of a fish-scale pattern. This dome terminates the centre bay of the roof.

THE DESTRUCTION OF WORKS OF ART IN ITALY.

Fresh evidence continues to be given as to the reckless and suicidal manner in which relics of antiquity and architectural monuments have been and are being treated in Italy. Mr. J. C. Robinson, writing in the *Times*, says:—

"One of the latest examples of Italian vandalism that occurs to me has recently been perpetrated in the old city of Cremona, a moribund place, which has no longer strength enough left to produce even fiddles. One of the most notable architectural monuments of Cremona was the splendid sculptured marble portal of an ancient palace, standing in one of the most conspicuous positions in the city. This doorway was one of the principal "lions" of the place; it gave a special character even to the locality, and it was one of those things which remained fixed in the recollection of every visitor. The noble owner of the palace lived in it, and one of the principal endeavours of his life seems to have been to make money by the sale of this doorway. Some sixteen or eighteen years ago the Kensington Museum was besieged with applications and offers to this end, but it seemed to me that it would be a sin and a shame to listen to them. I knew this doorway well, and nothing would have induced me to recommend its acquisition and removal by our own Government. It was for the Municipality of Cremona to have secured this fine work, and probably they might in the outset have bought the entire palace for the price which has since been paid for the doorway alone. There was no lack of representations and entreaties to induce them to do so. But, to make my story short, years passed away, photographs and descriptions of the doorway were persistently hawked all over Europe with a view to its sale, and at last, a short time ago, the French Government purchased it for 3,000*l.*, pulled it down, and removed it to Paris, where it may now be seen at the École des Beaux Arts. The public may now see, just erected in the Sculpture Court at South Kensington, two other fine portals, in black marble, recently brought from Genoa, originally constructed, as the inscriptions on them denote, by members of the famous old families of Doria and Spinola respectively, at the close of the fifteenth century. How these have been obtained is as follows:—Some three on four years ago these doorways were removed from a church in Genoa, and sold to a local speculator, who resold them to a well-known dealer in London for a considerable sum. The latter, however, made a bad business of it; the packing and carriage to England of the massive stones alone added greatly to the cost; and, after all, the customer he had in view failed him, so that they remained a dead weight on his hands. At this conjuncture they were brought to my knowledge. The importer died shortly afterwards, and his representatives, despairing of finding a purchaser, offered to sell them for little more than the cost of the transport of the stones to England. On these terms, by my recommendation, the nation has acquired them."

We have received two or three letters objecting to the interference of English writers in the matter, mainly on the ground that we have not ourselves clean hands. As it is as well to hear what can be said on both sides, we print one of these,—a communication from our correspondent "Meter":—

Sir,—In my humble opinion, the Italians should either resent or take no notice of impertinent attempts to influence their resolve to reconstruct Italy politically, socially, and artistically. Because English folk are foolish enough to suppose that art is never again to attain to the same excellence as in the past, it is no reason why Italians should entertain the same notion. I believe Italians to be much wiser in looking hopefully ahead, and in not exhibiting an overweening regard for the monuments of the past. Pioneers must carry hatchets. Good heavens! is it of any use boasting of science and progress if these do not afford us any hope of attaining to at least an equal excellence with ancient and Mediæval art? Down with your walls of brick and stone, so many feet by so many, if they interfere with any great project of public advantage. Note its dimensions down, and build it at South Kensington if you think it possesses such an immaculate beauty. Has Nature any regard for your great works? Not the least; she is insidiously crumbling them away, and the greatest in a few more generations will be total wrecks. It is upon the future,—the future,—that we must steadfastly rivet our gaze.

But who are we that we should assume the function of European censor in matters of taste? Have we no glass windows in our art house? Would it not be for our own advantage if we were to turn iconoclasts in our public ways? Are we not ourselves coolly contemplating the erasure of the time-honoured decorations of Thornhill in St. Paul's, the works of the friend and associate of Wren, the works which were executed under Wren's sanction? Have we not allowed Sir Isaac Newton's observatory, within the last few years, to be removed from the house of the great astronomer, and to be carried across the Atlantic? Can the consistent nation who, with the one hand preserves Shakspeare's House, whilst it drives Shakspeare's plays from the stage with the other, with any decency assume to direct the world in matters of taste? Go to! Meter.

THE HOUSE OF REST FOR WOMEN IN BUSINESS.

Sir,—I have this moment risen from the perusal of your correspondent "C.'s" eloquent and generous appeal for our House of Rest, and I cannot rest without thanking our unknown friend with all my heart for the glowing words which strengthen and cheer the hearts of the workers as well as help the cause of the toiling women for whom the writer pleads with such generous and powerful words.

I have seen, in long years of work amongst women, such desperate need of some such temporary rests, some place to which they could go for a breathing-time, where they get just a rest, take breath, and go on again, that last year help being offered me towards it, we opened this little house and furnished it by subscription. If I could convey to you a sense of the enjoyment it has given and the help it has been to the class for whom it was intended, no further plea for it would be needed. We have only six beds, and within three months we, i.e. my sister and I, have had about seventy applications for them, mostly from London, many applications which it has been very hard to be compelled to refuse. In many cases, during last spring, we had the great pleasure of being the means of restoring to entire health and the power of again earning their bread, some of quite the upper class of these women, who shrink from making their wants known publicly; others were cases of recovery from incipient consumption.

Then during the summer the enjoyment of numbers of worn-out women and girls is really a sight to make one thankful. Little pic-nic teas on the coves and beaches about here (I ought to say not a farthing of subscriptions or donations is devoted to these: my sister and I, of course, do all this ourselves), scrambles over the cliffs collecting stones and ferns,—all are sources of pleasure, of which, as one girl said, "one must have been eleven months in a London workroom to know what a holiday like this is." Another woman, who had fought bravely to maintain herself, without any relations of any kind to help her, and with miserable health in an ill-paid trade, and who had kept good through all difficulties, said to me, as we came home together from a little treat, "I never thought it would come to *me* to have such a holiday."

Some who have been with us have never had a holiday in their lives; others not for a period of five or seven years. Some had never seen the "real country." They do not come in the way of ordinary help, and in their effort to keep up appearances, do not care to seem as if they needed help, and they struggle on and on till they drop.

"Nine out of ten have something wrong with their lungs," said, in the most matter-of-fact tone, one of them to me the other day, herself in incipient consumption. But it is not only for health's sake we want to provide the means of

having a greater number here: I frankly own it is partly just to give them a little bit of pleasure, a real downright holiday. I know Devonshire is a long way from London, as kind objectors often say, but Devonshire is to them what Switzerland is to the higher classes. Besides, often they have never had to do with ladies, except as customers, before, and they are glad to find a friend in whom they can safely confide.

Pray forgive these details. Your correspondent's generous-hearted article in favour of these toiling women has made me trespass upon your patience, in confidence that you might be interested in hearing how the scheme had actually worked.

We spend as little of the money as possible in officials, that all may go direct to the workwomen. We have a working matron, who cooks, &c., with the help of a girl for part of the day, and my sister and I manage the house, settle admissions, write the letters, &c. We live ourselves at a short distance from the House of Rest, so the money given goes direct to those for whom it is intended.

C. E. S.
(Member of the Committee).

Babbacombe.

ARCHÆOLOGICAL ITEMS.

Glasgow.—The members of the Glasgow Archæological Society had their annual excursion on the 9th inst. to Dunfermline. The party left Glasgow by the 9.5 a.m. train, and on reaching Dunfermline were received by Provost Walls, Baillie Walker, and Mr. George Robertson, F.S.A. Scot. After a short stay at the City Arms Hotel, during which time Mr. Duncan read an elaborate paper giving a sketch of the history of Dunfermline from the time of Malcolm Canmore, the party proceeded to the Abbey Church, which they inspected very closely. The other places visited included the ruins of the Benedictine Monastery, the tomb of "The Bruce," the shrine of St. Margaret, the ancient palace of Malcolm Canmore, the Abbot's house in the Maygate, St. Margaret's cave and well, Ralph Erskine's monument, and the damask works of Messrs. James Mathewson & Son, in Bothwell-street. Afterwards the excursionists dined together in the City Arms Hotel.

Dalton-in-Furness.—An interesting discovery of Roman remains has lately been made on the Park Farm Estate, near Dalton-in-Furness, belonging to the Duke of Devonshire, and occupied by Mr. Wm. Slater. West's "Antiquities of Furness" refers to a consecrated edifice, containing one or more baths, which was built before Furness Abbey, in a meadow near Park Farm, and states that in 1801 part of a leaden aqueduct with numerous branches was found within the area of an ancient building. In digging for stone to complete some buildings the men have come upon some stone foundations, laid on massive pieces of oak, and which are believed to be the remains of one of the above baths. Steps are being taken to reserve the site, which adjoins the Furness Railway, until the real nature of the remains has been more clearly ascertained.

Dunfermline.—Steps are now being taken by a few gentlemen interested in antiquarian matters for the proper preservation of "St. Margaret's Stone," which stands on the public highway between Dunfermline and North Queensferry. It is to be placed on an erection consisting of an ashlar stone seat, measuring 10 ft. long by 2 ft. broad, above which there will be a support bearing an inscription giving the traditional history of the stone, which is, that it formed the resting-place of St. Margaret, Queen of Malcolm Canmore, on her frequent journeys between Edinburgh and Dunfermline.

Mont Cassin.—According to the Paris correspondent of the *Times*, the foundation of the old temple of Apollo at Mont Cassin, part of which was converted by St. Benedict into two Catholic chapels, has just been discovered.

Guisborough Abbey.—The Rev. Mackenzie Walcott writes concerning recent discoveries at Guisborough Abbey:—"Until recently the visitor to Guisborough Abbey has seen only the east end of the church,—a masterpiece of Decorated art. . . . Admiral Chaloner, during the last two springs, has occupied about fifty men who were out of work in the removal of the brambles and masses of stone which had been thrown down when the minster was leased out as a quarry. . . . For the first time the dimensions of the church have been ascertained; it was 367 ft. long by 77 ft. in width. The western walls of the aisles of the nave have been laid bare, and also the bases of four pillars of the northern arcade, and the south-west footstall, with sufficient remains of bases and shafts to enable an archæologist to reproduce the plan of the central alley. The site of the rood-loft, deeply dinted into the soil, probably by the fall of a central tower, is clearly marked, and two tombstones direct the eye towards the place of the high altar. Besides two coffins with trefoiled heads, a portion of the end of the tomb of the founder (erected long after his time) remains, which has been recovered from Hardwicke, whither it had been removed. It exhibits the shield of the Bruce arms, borne by St. Mary, round whom are kneeling figures of Austin canons in surplice and cope. In the spandrels are a cock on a rail and the Madonna. The upper slab covers the altar in the parish church, and in the porch are the two sides, with knights in armour bearing shields, and in the interspaces bishops, abbots, St. Jerome, and saints at their devotions or study. Along the cornice appear the evangelistic symbols, the sun and moon, the chalice, the shell of Compostella, mitre and staff, a cock on a rail, an eagle, and other devices. Southward of the church, at a distance of 146 ft., is part of the cellarage of the refectory (40 ft. by 10 ft.) in two spans, with quadripartite vaulting. To the north-west is the lower story of the gate-house, with a round-headed arch, and the arches of the postern and entrance to the abbey court. The guest-house is probably represented by a wall with Late Perpendicular windows fronting the market-cross in the town."

Old House at Blandford.—It is reported that "The Old House" in the Close was recently bought by Mr. Luff, and has since then been purchased by Mr. Guest, who is now the owner of this interesting relic of the old town. The danger of its destruction, a year or two ago contemplated, is thus averted.

Druid Circle at Pitlochrie.—A correspondent of the *Scotsman* says,—"No one can take a walk through the Pass, and onward to the battlefield of Killiecrankie, without having his nobler feelings stirred within him. But I have never taken that walk without feeling surprised at the neglected condition of an interesting Druidical circle which is situated close by the road, and half a mile west of Pitlochrie. There is here a Druidical circle of six, originally seven, standing stones, most deplorably neglected. Pitlochrie itself has not many historical objects, but this is one it might well be proud of. When I first saw this circle, a fence for a cabbage-garden divided it, and a pile of rubbish obscured it. I have looked each year for a change, but there is none for the better. The fence is still there, a piggery is close at hand, and a rubbish-heap and other nuisances now encroach upon the once sacred circle."

QUAY WORK AT NEWCASTLE-ON-TYNE.

CONSIDERABLE improvements on the public quay have been made recently by the Newcastle corporation, including the construction, which has just been completed, of a deep-water berth in front of the new grain-warehouse which is now upon the point of completion. The work has been in progress for some time past under very precarious conditions, the strata of land over which the quay had to be built being found to be resting upon quicksand, so that many months elapsed, and many thousands of pounds were expended by the contractor, Mr. Walter Scott, before a sufficient foundation could be obtained. According to the local *Daily Journal*, the foundation is formed by two rows of cylinders, each cylinder being 6 ft. in diameter and 6 ft. in length, and sunk into the bed of the river to the depth of 40 ft., which allowed of the river bed being dredged to a depth of 22 ft. below low-water mark, with a foundation of ironwork 20 ft. into the ground. The front portion of the rows of cylinders is closely keyed together by means of timber let into the sides of cylinders, and so framed as to form a wall hermetically sealed from the river water. Behind these cylinders is another row placed alternately behind the front ones, and each 5 ft. in diameter and 6 ft. in length. The cylinders were sunk by men working inside the cylinders under atmospheric pressure; and having been fixed at their proper depth, or low-water mark, they were filled in with concrete, upon which is built the masonry of the quay-wall. The work is of a very massive character, and practically solid as the earth itself. It is 150 yards in length, and has been built to accommodate the large Transatlantic steamers which are expected to convey large quantities of grain and other provisions to the warehouse, and which will be from 220 ft. to 320 ft. in length, and will each carry about 3,000 tons of cargo, with a draught of water of about 20 ft. each. The quay at this point is about 125 ft. in width, and upon it iron hydraulic hoists are now being constructed from the front of the quay to the grain warehouse, so as to form a ready means of communication between the front, and more particularly adapted to the rapid discharge and loading of vessels, which is one of the essential requisites of commerce and the shipping business in modern times, and has been very carefully considered and provided for by the company by whom the new grain-warehouse has been constructed. The contractor for the whole of the building is Mr. W. E. Jackson, under the superintendence of Mr. Charles Jackson. Sir Wm. George Armstrong & Co. Elswick Engine Works, are the contractors for the hydraulic engines for working the elevators and patent band machinery which convey the grain from the vessels into the warehouse and also work the cleaning apparatus and weighing hoppers. Messrs. John Abbot & Co., Gateshead, are the contractors for the general machinery, including steam-engine, boilers, accumulator, pressing pipes, and hydraulic fire-pumps and fire-extinguishing apparatus; and Mr. Walter Scott has been the contractor for the construction of the new quay-wall, for which Mr. Fowler, the borough engineer, has been the engineer, and the cost of which is upwards of 30,000*l*. Mr. John Thompson, Cloth Market, is the engineer for the building and machinery.

THE WEDGWOOD INSTITUTE, BURSLEM.

A FEW years ago a movement was set on foot for the purpose of presenting Mr. William Woodall with a testimonial in acknowledgment of his services in connexion with the erection of the Wedgwood Institute and the work carried on within its walls. Upwards of 400*l*. was subscribed, but Mr. Woodall not only declined to accept the testimonial for his own benefit, but with great generosity promised whatever might be needed beyond that amount for the purpose of erecting and fitting up additional rooms for a museum and other pressing requirements, on condition that the burgesses would simultaneously undertake the repair and renovation of the existing building by subscription. This renovation, involving a few slight structural alterations, has been effected, and the museum has been built at a total cost of about 1,000*l*. by Mr. W. Cooke, from the plans of Mr. G. B. Ford, architect. The new portion of the Institute is approached from the grand staircase by a spacious corridor, and comprises a museum on the first floor 25 ft. 8 in. by 17 ft., with a smaller room 18 ft. by 10 ft. 6 in. Underneath these are rooms which can be used for general purposes. The committee are thus enabled to remove the various works of art from the reading-room to a place suitable for them, and at the same time the comfort and convenience of the readers will be increased. The upper rooms are lighted from the top. The floors are of fire-proof construction, laid with encaustic tiles.

The new buildings were formally opened on the 11th inst., with an exhibition of the works of George Mason, A.R.A., and James Holland, both of them artists connected with North Staffordshire.

The Mayor having declared the buildings to be open, Professor Colvin gave an address on the works of the two artists mentioned. There were, he said (in conclusion), only two or three great provincial towns, such as Liverpool and Manchester, which were at present likely to be great centres of art worthy the name; but he looked forward to the time when works of art should not be so much centralised,—when there should be other centres besides that great Babylon of London. That Mason should have been born in that neighbourhood, should have come back there and painted Staffordshire scenes, and that an exhibition should be held in his honour in Burslem, was an indication of that future which one hoped for in art. In the pastoral eastern counties of England, two artists,—Crowe and Crome,—had been produced, who had described the scenes of their native counties. He wanted to see the works of such men recognised in their own town and neighbourhood, so

That artistic resources of the country might be indefinitely developed. He alluded to the effect of the vast industries of the Potteries on the district, and said, notwithstanding the grimness of the district, the tall chimneys, and the low houses, there was much there that was capable of picturesque rendering. Those pottery towns would not have done their duty until they had trained the eyes and instincts of the people, so that they might record artistically the aspects of their actual existence as it was. There was plenty to be done in that way,—plenty to yield results which should have their value to posterity. It was to the encouragement of art, both by the development of the local spirit in artists and their love for their native soil, that he looked for the real improvement and extension of art.

MONUMENTS AND STATUES.

Lord Colonsay.—There has just been erected on the Island of Colonsay by the inhabitants a large granite monument in commemoration of the late Lord Colonsay. As will be remembered, the monument erected about three years ago on the same site as the present one was destroyed by lightning shortly after it was completed. The monument now erected, like the former one, has been designed in the form of an obelisk, and, as placed on a cairn, stands 30 ft. in height. It is executed in unpolished red granite. In order to prevent the recurrence of the disaster which befel the former monument, a lightning conductor has been fixed.

Dr. James Bryce, F.G.S.—The local monument in memory of the late Dr. James Bryce, erected to mark the spot where he fell in the Pass of Inverfarigaig, has been completed. The monument consists merely of an upright monolith, undressed and rude, nearly as taken from the high craig beside which it stands. The stone is about 12 ft. above the ground, and is based upon a rock slightly higher than the level of the road, which passes within a few yards. The following inscription has been engraved upon a part of the stone dressed for the purpose:—

"In memory of James Bryce, LL.D., F.G.S., F.R.S.E., a distinguished geologist; born near Coleraine, Ireland, 1806; killed opposite this spot, while in pursuit of his favourite science, July 11th, 1877. Erected by scientific friends in Edinburgh, Glasgow, and Inverness."

Sam Bough, R.S.A.—The monument to the late Sam Bough, R.S.A., which was mentioned a few weeks ago, has been placed over the painter's grave in Dean Cemetery. The outcome of a subscription started shortly after Mr. Bough's death, under the auspices of a committee presided over by Sir Daniel Macnee, P.R.S.A., the memorial was designed by Mr. W. Brodie, R.S.A., and has been erected by Mr. John Rhind. It is a simple structure of grey New Galloway granite, bearing on one side a bronze relievo of the late artist's head and bust, modelled by Mr. Brodie, and cast, it is stated, at Sir John Steell's foundry.

Highgate Cemetery.—A marble monument, designed by Mr. J. O. Scott, architect, has just been erected in Mr. Julius Beer's mausoleum, Highgate Cemetery, a view of which was given in our pages, to the memory of his only daughter. The design is in Italian Renaissance. Standing on two steps, in St. Ann's marble, is a moulded base, bearing a sarcophagus, in which will be placed the coffin. On this will be a group in statuary marble, representing an angel receiving the spirit of the departed. The group is in the hands of Mr. H. H. Armstead, A.R.A. Around is a recessed arch and jambs, with carved angels in spandrels. On each side of the sarcophagus is a pedestal supporting a square column and pilaster richly fluted, with carved capitals. Over these is a bold entablature, in the frieze of which, and over the group, are a number of cherubs holding a ribbon. The material is Sicilian marble, and the monument has been executed by Mr. Henry Terry, architectural sculptor, Lambeth-road, who is also preparing a floor in coloured marbles for the mausoleum. A bronze gate, carved by Mr. Brindley, and cast by Mr. Young, of Pimlico, has just been hung in position.

Archdeacon Moore.—A recumbent effigy of the late Archdeacon of Stafford has been placed on the altar-pedestal in the south choir aisle of Lichfield Cathedral. The figure has been executed by Mr. H. H. Armstead, R.A., and was exhibited at the Royal Academy. It is of white Italian marble, and the pedestal on which it rests is composed of alabaster and British and foreign marbles. The front of the latter is ornamented with a scroll of marble mosaics, with a panel in the centre of rich green Anglesey marble. Columns of Languedoc marble are also introduced. In the hollow of the cornice, which is of Levantine marble, is the inscription, written by Dean Bickersteth. The work was designed by the late Sir G. G. Scott, R.A., and the pedestal has been executed by Messrs. Farmer & Brindley.

The Right Hon. T. H. S. Sotheron Estcourt.—The unveiling of the memorial statue to the late Mr. Sotheron-Estcourt took place at Devizes on the 16th inst. The memorial has been erected by Messrs. Wheeler, of Reading, from a design furnished by Mr. Woodyer, architect, Graffham, Guildford. It consists of a full-length statue by Mr. Nichols, of London, in combination with a fountain.

François Arago.—A statue of François Arago, the astronomer, is to be unveiled at Perpignan on Sunday next, September 21.

Robert Bruce.—The Lochmaben statue of King Robert the Bruce was unveiled on the 13th inst. by Miss Alice Hope Johnstone. Carved out of a close-grained freestone obtained from Fairholm Quarry, near Hawick, the figure stands 8 ft. high, irrespective of the plinth on which it rests; and is to be placed at the height of 10 ft. from the ground, on a pedestal of Dalbeattie granite of simple design. The sculptor, Mr. John Hutchison, R.S.A., has sought to represent the king as a sturdy warrior.

WATER SUPPLY.

Bradford.—The Mayor and Town Council of Bradford recently spent two days in inspecting the whole of the vast system of waterworks which, completed and in progress, forms the principal undertaking of the Corporation. On the first day the high-level works were visited, these including the Horton Bank and Brayshaw Reservoirs, the Stubden Reservoir, and the new compensation reservoirs and conduits at Leeming and Leeshaw, at the head of the Oxenhope Valley. The mayor (Mr. Angus Holden) expressed his great satisfaction at the successful completion of the works, which, as he observed, were designed for the benefit not only of Bradford, but of some thirty surrounding townships. Votes of thanks were given to the waterworks engineer, Mr. Binnie; to Mr. Gott, who, when in the service of the Corporation, originated the Oxenhope scheme; to the contractors, Messrs. Crabtree Bros. & Sugden; to Mr. Lee, their assistant; and to Mr. Patterson, the clerk of the works. On the second day the corporation first visited the Silsden compensation reservoir, part of the undertaking of the old Bradford Waterworks Company, where Mr. Binnie, the waterworks engineer, briefly explained the object of the reservoir, its capacity, drainage-area, &c. The drive was then continued by Addingham to the Chelker Reservoir, and thence the party proceeded by Draughton and Embsay to the navvy settlement at Halton Moor, above Barden. Here is the terminus of a railway which has been constructed by the contractors for the upper Barden reservoir, and which runs along the hill-side for about two miles and a half to the site of the new works. A special train was waiting, and in this the party were conveyed to the extreme end of the new reservoir, where the principal feeder is received. After an inspection of the works, under the guidance of Mr. Binnie, the party walked down to the lower reservoirs, where the carriages were in waiting, and were soon *en route* to Ilkley, where the party celebrated the occasion by dining together.

Blantyre.—As the Local Authority has not succeeded in agreeing with the proprietors and others whose lands would be affected by the proposed scheme for obtaining a supply of water for the special water supply district, it has been resolved, in exercise of the powers of the Public Health Act, to petition the Home Secretary to be allowed to put in force the powers of the Lands Clauses Acts in order to carry out the scheme agreed upon.

Burntisland.—The Corporation of Burntisland have recently opened new waterworks for the supply of the town. The works, of which Mr. John Sang, of Kirkcaldy, is the engineer, have cost about 25,000*l*. The distributing reservoir is situated at Kilmundy, a mile north-west of the town, 200 ft. above the sea level, and about 40 ft. below the level of the other reservoir. The principal reservoir is at Cullalo. The gathering ground, of which it is the culmination, extends to 1,200 acres, and the reservoir itself covers forty-three acres. It has a capacity of 100,000,000 gallons, or about 140 days' supply. The inhabitants of Burntisland are now provided for at the rate of 70 gallons per head per day, as against 16 or 17 in the best yield of their former supply.

Keith.—New waterworks for Keith and Fife-Keith, in Banffshire, have recently been opened by the Local Authority. The water is collected from springs in the glacks between the hills of Balloch, about three miles and a half from Keith. The reservoir cost 1,895*l*., and the pipes 2,097*l*., and other items of expenditure bring the total cost up to nearly 5,000*l*. The works were designed by Mr. Willet, C.E., Aberdeen, and carried out by Mr. Scott, contractor, Mr. Pirie acting as inspector of the works.

DRAINAGE AND SEWERAGE.

Kirkintilloch.—It is proposed to carry out a scheme of drainage for Lenzie and Kirkintilloch, at an estimated cost of 4,200*l*. Mr. Copland, of Glasgow, is the engineer.

Selkirk.—At a meeting of the Selkirk Town Council and Police Commission, on the 8th inst., Provost Anderson, referring to the completion of the new sewerage works, said the town was now provided with a complete system of underground drainage, with filtration and irrigation works, in compliance with the provisions of the Rivers Pollution Act. In carrying out this object it had been necessary to construct upwards of five miles of drains; these had been laid with fireclay pipes, jointed with Portland cement. At intervals there were manholes, flushing-tanks, and ventilating-shafts carried above the chimney-tops. So far as their experience went, the works appeared to be a success, the small quantity of water returned to the river after leaving the irrigation ground being clear, pure, and tasteless.

Galashiels.—At a meeting of the Galashiels Town Council, on the 8th inst., it was agreed to employ Mr. Lundy, C.E., Cardiff, to make a map of the burgh suitable for a general drainage scheme.

DANGEROUS STRUCTURES IN THE CITY OF LONDON.

THE large extent of property in London in a dangerous state of disrepair may be surmised from the following report made at *one* meeting of the Commissioners of Sewers,—the meeting on the 9th inst.:—

Notices in Reference to various Dangerous Structures.

Reported 1st time:—By Mr. Power—No. 109, Upper Thames-street, west external wall; No. 109, Upper Thames-street, archway or floor over a public way; No. 109, Upper Thames-street, front wall; No. 109, Upper Thames-street, rear external wall (next skylight). *Certificates* (premises dangerous):—By Mr. Power—No. 109, Upper Thames-street, west external wall; No. 109, Upper Thames-street, archway or floor over a public way; No. 109, Upper Thames-street, front wall; No. 109, Upper Thames-street, rear external wall (next skylight). By Mr. Collins—Nos. 29 and 30, Botolph-lane; No. 8, Botolph-alley; No. 7, Botolph-alley; No. 21, Love-lane, Eastcheap. *Reports (works not done)*:—By Mr. Collins—The "George" public-house, corner of Mansell-street and Little Somerset-street; the "George" public-house, and No. 12, Little Somerset-street; Nos. 10 and 11, Little Somerset-street; No. 11, Little Somerset-street; Nos. 19 and 21, Mansell-street.

Reports (works done).—By Mr. Collins—No. 3, Gun-square, Houndsditch; No. 3, Love-lane, Eastcheap; No. 5, Botolph-alley; Nos. 31 and 33, Fenchurch-street; No. 4, Botolph-alley and No. 7, Love-lane. By Mr. Power—No. 123, Lower Thames-street, and being the southern external wall; No. 124, Lower Thames-street, and being the southern external wall; Nos. 123 and 124, Lower Thames-street; No. 4, Paternoster-row; Nos. 11 and 12, Paternoster-row; Nos. 8, 9, and 11, Ivy-lane; No. 205, Upper Thames-street and Fye Foot-lane; No. 15, Ludgate-hill; and Nos. 10 and 11, Printing-house-lane.

Presentation.—At Swanage a large gathering recently took place at the Mowlem Institute for the purpose of presenting Mrs. Burt with an address and portrait of her husband, subscribed for by the workpeople and friends of Messrs. Mowlem & Burt, on the occasion of Mr. Burt becoming Sheriff of London. The portrait is the work of Mr. Edgar Williams. On the platform were the Lord and Lady Mayoress, Mr. Sheriff Burt, and Mrs. Burt, and a deputation from London to represent the subscribers. Mr. Hall, on behalf of the committee and subscribers, requested the Lord Mayor to present the address and portrait to Mrs. Burt. The Lord Mayor in doing so said that over 1,000 workmen in the employ of Mr. Sheriff Burt had subscribed, not only in London and Swanage, but also from Aberdeen and Guernsey.

PROVINCIAL NEWS.

Hastings.—The Local Government Board has sanctioned a loan of 15,000*l.* to the Corporation of Hastings for the erection of new municipal buildings, which will not include a town-hall, but will comprise a commodious Police and County Court,—which is much needed,—with the usual municipal offices. The site belonging to the Corporation was not large enough for a town-hall, and owing to the scarcity and high value of eligible building land in Hastings, a new site, together with the extra buildings, would have just doubled the cost, and have made it some 30,000*l.* instead of 15,000*l.* At the meeting of the Town Council on the 5th inst., a tender, amounting to 12,180*l.* was accepted for the execution of the work.

Longton.—At a meeting of the Longton Town Council, on the 4th inst., it was unanimously resolved, on the recommendation of the Baths Committee, to erect baths on the site of the show ground, and the surveyor was instructed to prepare the necessary plans.

Willenhall.—At the meeting of the Willenhall Local Board, on the 1st inst., a report of the Sewerage Committee was read. Mr. John Clark attended and explained how the lease from the Earl of Lichfield affected the land which it was proposed to purchase for carrying out the sewerage scheme, after which it was resolved, "That such report be received, and that this Board, after the fullest discussion, are of opinion that the price of 300*l.* an acre, asked by Lord Lichfield's agent for the land in question, is so high, and so far above what they are advised is its fair value, that they do not feel justified in accepting it."

Walsall.—The new post-office buildings, which for several months past have been in course of erection at the junction of the two new streets at the back of the County Court, are now nearly finished. The style is Italian, the materials used being red brick, with stone dressings and cornice. From the vestibule, entrance is obtained to the public office, a well-arranged apartment, 24 ft. long by 19 ft. broad, and 15 ft. high. Along the centre of this apartment is a broad mahogany counter, with desks for the transaction of money-order, telegraph, and stamp business, whilst at the side are compartments for the writing of telegrams. At the back of the general office is the sorting-room, 50 ft. by 24 ft., and the postmaster's office adjoins. The upper floor is reached by a stone staircase, and the set of rooms in this part of the building includes the telegraphic operating-room, the messengers' waiting-room, a retiring-room for the clerks, a similar room for the letter-carriers, the battery-room, a bedroom, &c. The total cost will exceed 4,000*l.* The work has been carried out by Mr. D. Moore, from designs by Mr. James Williams, of H.M. Office of Works. Mr. G. Reavell, Birmingham, has acted as clerk of the works.

Shipley.—The Local Board of Shipley, near Bradford, have, in pursuance of powers conferred upon them by Act of Parliament in 1874, in spite of many adverse circumstances, made considerable progress in street and other improvements, of which a long and detailed account has been published in the *Bradford Observer*. Of late years the town of Shipley has acquired an importance of which its founders had no possible conception. Originally a few clusters of houses bordering the market-place, and a broken line of dwellings along the main high road from Leeds to Skipton, constituted the whole of Shipley village early in the present century. Even in 1826, when the church was built, the erection of that edifice was looked upon as a great mistake, the site being considered so far away from the village. The consequences of abnormal growth are seen in the narrowness of the roads, as well as in the irregular construction of many of the dwellings. On the other hand, the better arrangement of streets and houses in the newer portions of the district, as on the higher side of Church-lane and Saltaire, so threw into the shade the cramped alleys and streets of old Shipley, that a remodelling was almost necessitated for the sake of appearance. The Public Health Act was adopted in the township in 1853, after a local inquiry which fully established the necessity of some improving hand being laid upon the place, and once established, the new authority exhibited great enterprise in obtaining a Waterworks and Police Act, the powers of which were extended in 1865 and 1873. By the Act of 1874, in addition to other provisions for rendering more efficient the administration of the town, the Local Board were empowered to borrow, in respect to the water undertaking, 10,000*l.*; in respect to street improvements, 50,000*l.*; and in respect to other purposes, 40,000*l.* The Board have since obtained an addition to their powers for street improvements amounting to 16,000*l.*, making a total of 66,000*l.* borrowed for this purpose alone. The waterworks scheme of the Board, so important to the well-being of the town, has turned out a somewhat expensive affair. The principal reservoir at Eldwick, for which an estimate of 28,000*l.* was given, has already cost over 50,000*l.*, and it is not yet completed.

Salisbury.—The new banking premises for Messrs. Pinckney Bros. have just been completed in the Market-place, at the corner of Winchester-street. The building is in the domesticated style of half-timbered Tudor work, the principal material being red brick. In the lower parts Bath stone dressings are freely introduced, whilst the whole of the upper portions are of half-timbered work, filled in with stuccoed plaster, ornamented with *sgraffito*. The entrance porch has supporters on either side sculptured in stone, in the shape of griffins on their haunches, bearing shields. Upon these shields are emblazoned respectively the arms of the Pinckney family and the civic arms of Sarum. The barge-boards of the various gables are enriched by carved oak work, and above the numerous gables and gablets of the building tower the tall red brick chimneys. The *sgraffito* work, as well as all the wood and stone carving upon the building, has been carried out by Mr. Harry Hems, of Exeter. The mosaic floor in the entrance lobby is by Messrs. Burke, of London. The architect is Mr. Henry Hall, of London, and the work has been carried out by Messrs. Hale & Sons, builders, of Salisbury.——A fine-art exhibition is to be opened in Salisbury during the week commencing the 22nd of September. Mr. James Hussey is the honorary secretary.

MASTERS AND MEN.

Glasgow.—The Glasgow painters held a private mass meeting on the 12th instant, and adopted resolutions in favour of trade organisation.

The Potteries.—The master-builders of Stoke-on-Trent and those of Newcastle-under-Lyne, Hanley, Burslem, Longton, and Tunstall, have resolved on a general reduction in the wages of bricklayers and other operatives, owing to the general fall of wages throughout the country.——At a meeting of the Master Potters' Association at Hanley on the 11th instant it was unanimously resolved to reduce absolutely the wages paid to all workmen in the china and earthenware trades of the Staffordshire potteries 10 per cent., and it is stated that there was a strong feeling against arbitration.

London.—A strike has occurred among some of the workmen of Messrs. Browne & Robinson, builders, Worship-street. That firm is now engaged in the erection of a block of warehouses in Fann-street, Aldersgate-street, and it appears that about a month ago the labourers engaged on the job complained of having insufficient help to serve the bricklayers, and that the foreman, on the 12th instant, having given an irregular order, the men who were getting 5½d. per hour demanded more help, or an increase of ½d. per hour. The demand was refused, and they, followed by the bricklayers—thirty-one men in all,—thereupon left their work, and got their money. This, however, had not affected the masons' and carpenters' work on the job, which has not been stopped, as a few bricklayers remained, and lads have supplied the place of bricklayers' labourers.——On the 13th instant, at a meeting of the members of the engineering trade, held at the Rising Sun, Blackfriars-road, the secretary of the Central Executive committee for the men on strike presented the weekly balance-sheet, which stated that a committee appointed by the West London branch had investigated the strike-books, and had certified that there were no grounds for the imputation of dishonesty and mismanagement which had been cast upon the officers by recent auditors. There were now 286 men and 432 children on the strike-rolls, the highest pay to them being 7*s.* 6*d.* weekly.

Manchester.—On the 5th inst. the representatives of the Manchester and Salford Associations of House Painters met at the offices of the Master Builders' Association, No. 45, Arcade Chambers, and signed the following award of the Mayor of Manchester:—

"Having held a court of arbitration for the purpose of settling certain differences between the master and operative house-painters of Manchester and Salford, and heard the various facts stated and arguments used on both sides, and having duly considered the same, I decide and award as follows:—On the question of wages, That the employers have established to my satisfaction that there is just cause for a reduction in the wages now paid, and that the standard rate of wages be reduced on and after September 1st, from 7½d. to 7d. per hour. As regards town work and walking time, that the system hitherto adopted of workmen proceeding in the morning to certain points or boundaries other than, and often in opposite directions to where, their work lies, and of charging the time occupied in walking from such points or boundaries to their work at the rate of working wages, is vicious in principle, wasteful in practice, and unjust in result, and must be abolished; and that the new rule proposed by the employers to the effect that 'men working within three miles of Albert-square must be on the job at starting time' is sound in principle and approved by me accordingly. As regards country work, that the scale of distances proposed by the employers, with the extra pay for lodgings, and the conditions as to men travelling to and from their homes, are reasonable, and must be adopted, with the following addition: That the men have 1*s.* per week extra when having to stay in the country on Sunday. CHARLES S. GRUNDY, Mayor, Arbitrator."

The Scotch Iron Trade.—The ironmasters of Scotland, at a meeting held on the 9th inst. in Glasgow, resolved not to raise the pay of their operatives, and also to put out of blast one-third of the furnaces at present in operation.

Dearth of Work at the Antipodes.—The *Melbourne Argus* says the condition of the artisans and labourers in Victoria at the present time is most deplorable. On every hand there is a cry of workmen of all kinds being out of employment. On the 23rd of June a deputation from the unemployed presented to the Government a petition praying for work. It was signed by 1,001 men, comprising labourers, carpenters, blacksmiths, engineers, moulders, tinsmiths, plumbers, painters, bricklayers, masons, and other trades.

Intimidation.—Mr. Henry White, of Waterford, having procured a set of Messrs. Allen Ransome & Co.'s ingenious butter-firkin-making machines, mentioned by us in connexion with the Agricultural Show at Kilburn, has received a letter threatening himself and his business with destruction unless he gives up the idea.——At Manchester, a man named Dore, a glass-cutter, who has been working on his own account in disregard of the rules of the union, of which he is presumably not even a member, and whose offence has been an endeavour to find purchasers for his work, has been shot at and wounded in the public streets, and has been again threatened, and even assaulted, since his discharge from the infirmary.

CLOCKS AND BELLS.

Hathersage.—A new clock has just been erected in the church tower of this village. It strikes the hours, chimes the Cambridge quarters, and shows time on one dial 5 ft. diameter. It was manufactured by Mr. John Smith, Derby.

Storrington.—A new turret-clock has just been fixed in the tower of Storrington Church, near Pulborough. It was manufactured by Mr. J. W. Benson, of London, who has already made and fixed a large number of clocks in this part of the country. The clock is made upon the latest principles, the bed or frame being of cast iron, the different parts so constructed and bolted into the same that any portion can be easily removed for cleaning or other purposes without disturbing the remainder.

Too Fast.—One of the effects of the panic of 1873 was to defeat certain railroad projects in Virginia, and suddenly check the growth in its infancy of a grandly laid-out city near Quantico, in Prince William County, in that State, about thirty miles down the Potomac. New York capitalists purchased there a tract of land,—about 7,000 acres. This tract they laid out in streets, avenues, and squares, and named it Potomac City. Mr. Bangs was so confident of the success of the enterprise that he immediately had erected, near the intersection of Potomac-avenue and the railroad, a large hotel. This is a concrete building of four stories, containing 122 rooms, and it cost $68,000. It is well arranged and finely finished. This building, now occupied only by some one to care for it, has long been a wonder to those who have caught sight of it from passing cars or steamers. The enclosure surrounding it having once or twice been cultivated in corn, gave it a still more singular appearance,—a hotel in a cornfield.—*Washington Star.*

THE LATE MR. WALTER NEWALL.

AN unostentatious but useful and honourable career was closed by the death, on the 28th ult., of Mr. Walter Newall, late principal clerk in the Building Act office of the Metropolitan Board of Works. Mr. Newall, who was in his 75th year, entered the public service in September, 1844, as clerk in the office of the Official Referees under the Metropolitan Building Act of 1844. On the passing of the Act of 1855, Mr. Newall elected to take office under the Metropolitan Board of Works, a position which he occupied until May, 1878, when he retired, the Board granting him the maximum allowance under the Superannuation Act of 1866. Mr. Newell may be said to have devoted himself to the Building Act, and had a considerable part in the framing of the Act of 1855, and of the various measures which had been put forward for the purpose of amending and extending that Act. He was examined at considerable length by the Committee of the House of Commons on the Metropolitan Fire Brigade, presided over by Sir H. Selwin-Ibbetson, in 1876, and on all matters connected with the municipal government of the metropolis his lengthened experience and clearness of judgment made him a valuable adviser. Mr. Newall's face and figure must be familiar to many of our readers, and there must be but few connected with building in the metropolis who have not received some kindness at his hands, and who will not remember him as an upright, single-minded public servant.

THE NATIONAL SCHOOL OF ART WOOD-CARVING.

THIS school was established with the view of encouraging the neglected art of wood-carving in this country by a committee of gentlemen, who, being aided by the Society of Arts and the Drapers' Company, engaged a Florentine wood-carver, Signor Bulletti, and opened a school last year at 3, Somerset-street, Oxford-street, with the assistance of Mr. Donaldson. A convenient room in the Royal Albert Hall has been placed at the disposal of the school, and the Drapers' Company have given a further grant with which the committee are enabled to provide for the instruction of twelve free students.

Candidates for free studentships are selected from persons of the industrial class who are intending to earn their living by wood-carving; other students are admitted to the day classes of the school on payment of 2*l.* a month, or 5*l.* a quarter, and to the evening classes on payment of 15*s.* a month, or 2*l.* a quarter. For particulars, applications should be addressed to Mr. Healey, Royal Albert Hall, Kensington. We will take an opportunity of looking into the working of the school.

TAMPERING WITH "TIME-SHEETS."

AT the Westminster Police Court, on Saturday last, Richard Warden, a scaffolder, was charged with uttering to George Alexander Welsh a certain forged authority for the payment of money, with intent to defraud George Shaw.

Mr. George A. Welsh, clerk to Mr. George Shaw, builder, of 70, Page-street, Westminster, said the prisoner, as a scaffolder in the employ of the firm, would have his time booked, as a check, by the timekeeper at the works where he was employed, and in this instance he was at work at 123, New Bond-street, and brought over to Westminster a sheet signed by Hurrell, the timekeeper, for twenty hours' work, at 6d. per hour. Witness saw it had been tampered with, and communicated with Hurrell, whose answer was that the sheet had been made out for ten hours only, and it was then apparent that the 10 had been altered to 20 in the most clumsy manner. The prisoner, who apparently suspected nothing, was told to call for the money in the morning, and, when he did so, was given into custody.

Henry Hurrell, the timekeeper, proved that the prisoner worked only 10 hours, for which he gave him a check. It had been altered without his sanction to "20." When Mr. Welsh sent to him to verify the check he at once detected the fraud, and he sent back to Mr. Welsh by the prisoner, under cover, to that effect.

The prisoner was committed for trial.

BRICK-STEALING.

AT the Middlesex Sessions, before Mr. J. Dunnington Fletcher, Andrew Mullins and George Taylor were indicted,—Mullins for stealing 1,500 bricks, the property of Abraham Cohen, and Taylor for receiving them, well knowing them to have been stolen.

The prosecutor is a builder, of 22, Portsdown-road, and about the 4th of July he ordered 8,000 bricks of Mr. Nash, of Slough, and they were to be counted by Mr. Woolridge, to whom the prisoner Mullins was carman. Instead of 8,000, only 6,500 bricks were delivered on his premises. Another carman, named Sibley, was with Mullins, and they each took 500 bricks, and according to his statement, instead of going the direct road to Kilburn, where they had to take them, Mullins went down another road, and when Sibley got to the place he did not find Mullins there. The same evening he went to Taylor's place, and there found 500 bricks that had been shot out loose, and he brought away one of the bricks to show that it was of the same kind they had to deliver on the premises of the prosecutor. Detective Clury afterwards went to Taylor, whom he found in an unfinished building in Kilburn-lane, and told him that he had come to make inquiries about a number of bricks that had been stolen, the property of Mr. Cohen, 22, Portsdown-road, Maida-vale, and as some had been found on his premises he was asked to account for them, and whether he had an invoice for them. At first he said he knew nothing about them, but after some hesitation he said he supposed that the truth must come out, and that Andrew had shot them there as he could not get them through the lane with him. He said he had not paid for them, nor had he used any. The detective then told him that he had seen one of his men take two hodfuls on to the scaffold a short time before, and he believed there were some on the scaffold then. The detective added he should take him into custody for receiving a quantity of bricks well knowing them to have been stolen, when Taylor said he would pay Mr. Cohen for the whole lot. He was then taken to Kilburn station, and Mullins was apprehended the same evening.

The jury returned a verdict of guilty against both the prisoners.

Mr. Fletcher sentenced Mullins to hard labour for four months, and Taylor for six months.

STAINES TOWN-HALL COMPETITION.

SIR,—I have seen an advertisement inviting architects to compete for this work. With your permission, I should like to draw attention to the terms upon which they are asked to do so.

The total cost of the building is to be 2,500*l.*, the architect whose design is chosen being required to superintend its erection. The Local Board magnanimously put it thus:—"It is not proposed to offer a premium for plans, &c., but a sum of 100*l.* will be paid, which shall be inclusive for plans, elevations, sections, &c., and the superintendence of the works." We shall be politely asked to work for honour and glory next, and to discard such a vulgar and prosaic notion as being compensated for one's services. I earnestly hope that architects who respect their calling will refuse to compete.

The profession is losing caste, and its members have, in a great measure, to thank themselves for it.

ESPRIT DE CORPS.

STONE *v.* CEMENT.

SIR,—From practical experience in the North, I confidently endorse the conclusions your correspondent, J. Taylor, arrives at (p 1006):—1. That houses built of concrete composed of crushed materials, such as the slag of blast-furnaces, pottery refuse, &c., are (from many points of view) superior to those built of brick or soft freestone; and 2. That the many failures which have occurred have been entirely owing to neglect on the part of the builders, either to obtain proper materials, or to secure their thorough admixture.

But these difficulties (by proper supervision) removed, the principal one,—of architectural treatment,—still remains; for the stucco fronts, with their panelled and *sgraffito* decoration, can only be accounted most miserable failures.

Concrete is undoubtedly a most excellent building material, but it should only be used for the purpose for which it is fitted, viz., the central filling-in of walls; the facing must be of materials which are capable of architectural treatment.

Many of our old churches, particularly in the eastern counties, are built in this way, the walls being filled in with a sort of concrete, and faced with flint and stone.

Why, then, should not concrete walls be faced with terra-cotta? a material most admirably adapted for use in large towns; and if manufactured with a slight vitreous glaze, we should have one of the finest possible materials for resisting damp, smoke, dirt, and dust; but the glaze must be very different from that in general use, which is far too strong and glaring.

By the judicious use of different-coloured terra-cotta, plain and slightly glazed, with some parts, such as the shafts of columns, panels, &c., decorated with a richer glaze, or even with enamels, almost any desired architectural effect might be obtained, which would be second only in appearance and durability to fronts of granite and marble. For the internal face of the walls I would recommend concrete blocks built up with and bonded to the terra-cotta, the whole filled up with concrete.

For ecclesiastical architecture, the use of terra-cotta would open out a noble field of coloured decoration, and instead of the usual miserable bareness of stucco, the walls of our churches might be rendered rich and living with a glorious harmony of permanent colour, capable of the highest and most artistic treatment. Caps and other foliated parts should be cast in block; they could then receive as high an amount of individual art-treatment as they would at the hands of the carver.

JOHN L. BIRCH.

SELF-ACTING SYPHONS.

SIR,—In the short abstract you have given (at p. 1002) of the paper I read on this subject at the recent meeting of the British Association at Sheffield, your description of the syphon which I have finally adopted as most effective does not explain what is really the essential feature of this form; viz., the expedient for throwing the water clear of the sides of the syphon. At the upper mouth of the longer leg a *conical shell* is fixed, projecting inwards clear from the inner surface of the tube; whereby the water, trickling over the edge of the shell, is directed so as to fall towards the centre of the tube, and thus produce the maximum effect in displacing the air. It is this conical shell (shown both in the diagram and in the working model exhibited at the meeting) which enables mere driblets of water to start syphons of large dimensions, and thus renders syphons of this form so valuable for automatically flushing drains and sewers. For instance, as explained in the paper, the water which runs to waste from a drinking-fountain will start a syphon 10 in. or 12 in. in diameter of the improved form; so that this trickle of water, when collected in a tank, can be made the means of automatically flushing a sewer of considerable size.

ROGERS FIELD.

CHURCH-BUILDING NEWS.

Fordington St. George.—The parish church of Fordington St. George, Dorchester, is being re-seated, from designs by Mr. Chapman.

Brighton.—All Souls' Church, Eastern-road, Brighton, has just been restored, from plans by Mr. E. E. Scott, architect, Brighton. The builder is Mr. Barnes, of North-street. Some of the principal features are a new organ by Mr. Farrant; an east window, the gift of the late incumbent, the Rev. Snowden Smith, in memory of his wife; re-seating of the free seats; raising the roof, and putting in a wooden one in place of the old plaster ceiling; placing wooden fronts of carved work in the galleries; and re-painting the church. The church was re-opened on the 7th inst.

Liverpool.—On the 3rd inst. Mr. Charles Groves, who is a principal contributor to the undertaking, laid the foundation stone of the new church of St. Cyprian, at the corner of Durning-road and Edge-lane, Liverpool. The building, of which Mr. Henry Sumners is the architect, will be in the Gothic style, and will accommodate about 800 persons. The site altogether comprises 1,400 square yards, and room has been left for the erection of a vicarage. The church will include a nave and transept, together with a tower and spire at the west end. The contractor for the building is Mr. James Leslie, of Bootle, and for the woodwork Messrs. Morrison & Son, Wavertree.

Southwick.—A new mission church and school-room is about to be erected at Fishersgate, Southwick, Sussex. The plans have been prepared by Mr. Arthur Loader, architect, Brighton.

Bathford.—Nearly a quarter of a century ago the work of restoring the parish church of St. Swithin, Bathford, was first commenced by Mr. H. D. Skrine, of Warleigh Manor, who, when additional accommodation was required, added a north aisle, which is still known as the Warleigh aisle. In 1872 the church was restored, under the direction of Mr. Preedy, architect, London, a new south chancel aisle being added, and the south aisle being enlarged. The old tower to the west of the church, which was square in shape, was left. It was confessedly a tower erected in the early part of the present century, and it is now to be replaced, at the cost of Mr. Skrine, with a tower more in keeping with the rest of the church. The foundation-stone of this tower was laid on the 29th ult., by the Rev. J. H. Skrine, son of Mr. H. D. Skrine, who, through illness, was unable to be present. The tower will be but a little less than 100 ft. in height, square, and surmounted by a turret at the south-west corner. It will be erected from the plans of Mr. Preedy. It will be constructed of local stone, by Mr. W. H. Newman, builder, of Bathford, at a cost of 1,000*l.*

Ilchester.—The church of St. Mary, Ilchester, formerly the capital of Somerset, is about to undergo restoration at a cost, as estimated, of 2,240*l.* It is proposed to rebuild the nave, add a south aisle, and restore the north chapel.

Shipton Bellinger.—The parish church has just been reopened after restoration, at a cost of 1,500*l.*, under the direction of Mr. Withers, architect, London.

South Shields.—Holy Trinity Church, South Shields, has been reopened, after alterations and enlargement. The nave has been lengthened one bay, and the whole of the internal fittings have been renewed. The carving round the pulpit was done by Mrs. Johnson, the wife of the architect, and by her presented to the church. The church as altered will accommodate 1,000 people. The total cost is about 3,000*l.* Messrs. Austin, Johnson, & Hicks, of Newcastle-on-Tyne, have been the architects, and Messrs. Walter Scott & Son the contractors for the whole of the works. Mr. Charles Cobham, of Sunderland, has been the clerk of the works.

Upton-on-Severn.—The new parish church of Upton-on-Severn was consecrated on the 3rd inst. It has been erected by Mr. T. Collins, builder, Tewkesbury, from plans by and under the superintendence of Mr. A. W. Blomfield, architect. The style is Geometrical Decorated. The external facings are of coursed Stanway rubble, with Bath stone dressings. The plan is rectangular, consisting of a nave and aisles, chancel, transept, north chancel aisles, and vestries. There is a square tower at the north-west angle, carrying a broached stone spire, having a moulded pinnacle at each angle. The lower stage of the tower constitutes one of the principal entrances, and the belfry above is designed to receive a peal of bells. The new building will accommodate more than 700 persons. The dimensions of the various portions of the structure are as follow:—Nave, 84 ft. by 24 ft.; aisles, 13 ft. 3 in. wide; chancel, 32 ft. 5 in. by 22 ft.; transept, 15 ft. 6 in. by 20 ft.; chancel aisle, 31 ft. by 16 ft. The tower inside is 12 ft. square, with walls of 4 ft. in thickness. Height to the top of tower, 82 ft.; to top of finial cross on spire, 183 ft. The amount of the contract at which the work was taken was 11,194*l.* 12*s.*; additional for extra height of spire, 60*l.* This does not include the warming apparatus, nor the altar-table, font, pulpit, lighting arrangements, fencing, levelling of ground, &c. The total cost incurred exceeds 12,000*l.*

Hove.—The church of St. Patrick, Cambridge-road, Hove, Sussex, was re-opened on the 7th inst. The interior of the edifice has undergone a thorough renovation at the hands of Messrs. Cheeseman & Co., builders and contractors, Brighton, and several important improvements have been effected in the structure, one of which is the lighting of the cloister, which was formerly very dark. The walls and ceilings, and all the woodwork, have been painted, and the stone-work has been well cleaned. The organ has been thoroughly cleaned by Mr. Willis, the builder of the instrument. A large stained-glass window has been placed in the west end of the church. It is by Messrs. Clayton & Bell.

East Worthington (Devon).—The ancient parish church of St. Mary, East Worthington, having been nearly rebuilt, the re-opening took place on the 14th inst. The work has been carried out under the superintendence and from the designs of Messrs. Clark & Holland, architects, of Newmarket, Cambridge. The structure consists of nave, chancel, and a western tower, some 40 ft. high. The church is very small, only accommodating 80 persons, but the parish itself musters but 250 inhabitants all told, so that it is sufficiently roomy for the requirements of the place. The work of restoration has occupied nearly two years. The chancel work has been done at the vicar's expense (Rev. W. M. Bruton) by Mr. Wm. Parish, builder, of Witheridge; and Mr. Selly, builder, of the same place, has done the nave and tower. This part has been done at the expense of the Earl of Portsmouth. Four bells have been hung in the tower by Mr. Moses Luxton, of Winkleigh.

Chulmleigh.—The parish church of St. Mary Magdalene, Chulmleigh, has been re-opened, after restoration. The building is a structure of the Perpendicular period, and has a fine western tower. The works just completed include the complete reseating of the nave and aisles in oak, the erection of stalls of the same material in the chancel, the putting-up of a memorial pulpit, the addition of a new credence, and in the general restoration of the tower. The seating throughout has been made by Mr. Grant, from the designs of Mr. J. F. Gould, architect, Barnstaple, and the carving is by Mr. Harry Hems, of Exeter. The pulpit is erected in memory of the late Dr. Davey. It has been especially designed by Mr. R. Medley Fulford, architect, Exeter. In the main it is of wainscot oak, but stands upon an octagonal base of Dumfries and Painswick stones. The pulpit has been constructed and erected by Mr. Harry Hems. The works to the tower embrace the erection of new battlements and crocketed pinnacles in Dartmoor granite, and other necessary additions and renovations. This portion is not yet complete, but is being carried out from the designs and under the supervision of Mr. Edward Ashworthy, architect, Exeter.

Stoke Gabriel.—The parish church of Stoke Gabriel has just been re-opened, after restoration. The village lies about four miles south-east from Totnes, on the east bank of the estuary of the Dart. The church is an exceptionally lofty one, and altogether is a fine sample of a Devonshire church. It has a good western tower. Messrs. John Hayward & Son, architects, Exeter, having prepared designs for the proposed restoration, the contract was taken by Mr. Crocker, builder, of Torquay. The works have embraced the restoration of the building generally, especially the putting on of new roofs and the construction of a new vestry and organ-chamber, and a new western tower-screen, dividing the ringers in the belfry from the congregation. This screen, like the old ones, is in oak. A memorial stained-glass window has been placed in the east end. It is by Messrs. Clayton & Bell. Beneath it is a reredos in Caen stone, made from Mr. Hayward's design by Mr. Harry Hems, of Exeter, who has also done other wood and stone carving in the church. The roofs are all open, their intersections stopped by carved bosses. That of the chancel is decorated in colour, the decoration of this and of the old screens dividing the chancel and nave aisles from each other having been carried out by Mr. F. Drake, of Exeter. Mr. Drake has also done the geometrical glazing of the windows. A new organ has been erected in the south transept by Messrs. H. P. Dicker & Son, of Exeter.

ROMAN CATHOLIC CHURCH-BUILDING NEWS.

Hooton.—On the 21st ult., the new Roman Catholic Church of St. Mary of the Angels, at Hooton, was opened by Dr. Knight, the Roman Catholic Bishop-auxiliary of Shrewsbury. The style adopted by the architect, Mr. E. J. Tarver, is thirteenth-century Gothic. The church is built of red sandstone, taken from a quarry belonging to Sir John Stanley Errington, and will accommodate about 200 worshippers. There are few embellishments about the stonework. The altar and side altar were made in Paris. The masonry work and vaulting were executed by Mr. William Pritchard, of Little Neston; the woodwork, by Mr. A. Bleakley, Birkenhead; the ironwork, plumbing, and glasswork were undertaken by Mr. H. Tomlinson, of Liverpool; the carving by Mr. T. Allen, of Chester; and seven stained-glass windows in the chancel were made and fixed by Messrs. Heaton, Butler, & Bayne.

Burton-on-Trent. — On the 28th ult. a new Roman Catholic Church was opened in Burton. The structure is of brick with stone dressings, and is Early Gothic in character. The plan comprises nave, north and south aisles, sanctuary, small side-chapels, sacristry, organ-gallery, and tower, and is capable of seating about 400 persons. The nave arches are supported by polished Aberdeen granite columns, with Stourton stone moulded caps and bases. In the spandrels of the arches carved Bath stone corbels support a polished Irish marble shaft with carved capitals to form pedestal rests for eight carved figures, only one of which is at present fixed. The chancel arch is of moulded Bath stone, springing from moulded caps on three-quarter columns of polished Aberdeen granite, the base being formed by carved stone corbels. Both bases and soffit of the arch are filled with carved pateras. The principals and roof timber are varnished deal, diagonally boarded, laid with felt and covered with the Broomhall Tile Company's patent roofing tiles. The west front is in Guild-street, and here is placed the tower, which is at present unfinished. It is intended, when funds will permit, to carry it up higher and add a spire. Immediately under the west window a double niche has been fixed to receive the figures of SS. Mary and Modwena, to whom the church has been dedicated. The contract for the building was let to Messrs. Lowe & Sons. Messrs. Camm, of Smethwick, did the glazing, and Mr. Jerram, of Derby, supplied the heating apparatus. The church was erected from designs by Mr. J. K. Morley, architect. A font is shortly to be added, a fine block of alabaster having been specially selected for the purpose from the quarries of Messrs. Staton & Newton, at Fauld. Up to the present (exclusive of the organ and reredos) the cost of the building has been about 3,500*l.* The reredos was supplied by Mr. Roddis, of Birmingham (who also did the carving) at a cost of 200*l.*

STAINED GLASS.

Pennycross. — A stained-glass window has lately been placed in the south transept of St. Pancras Church, Pennycross, near Plymouth, to perpetuate the memory of the late Mr. W. C. Hodge, of "Pounds." The window is of three lights, with a traceried head of Perpendicular design, and the subject illustrated is the parable of the Good Samaritan. The window has been designed and executed by Messrs. Fouracre, of Stonehouse.

Inverness.—At a meeting of the Inverness Town Council, on the 1st inst., the Town-hall Committee recommended that the stained-glass windows in the new Town-hall be filled in with the arms of the principal Highland clans. Councillor Rhind moved as an amendment that the badges of the different trades and industries of the burgh be substituted for the arms of the clans,—such as masonry, workers in wood, workers in iron, gold, and silver, and other fabrics, commerce, agriculture, engineering, soulpture, painting, banking (represented by the arms and motto of the local bank), the railway, telegraphy, education, literature, the press, sportmen's windows, the Church of the country, an illumination of the old sculptured pediment found in the old building, the arms of Scotland, the quarterings of the town arms, the arms of provosts, and members of Parliament; also those of the peers of the realm who have forwarded the prosperity of the town, such as the Duke of Sutherland, the Earl of Seafield, Earl of Moray, Duke of Gordon; the arms of those who were friendly to the burgh in olden time, such as the Mackintosh, Forbes of Culloden, and Fraser of Lovat; the monograms of the Provost, Bailies, and the Councillors of the First, Second, and Third Wards. Councillor Rhind, in support of his proposal, said that those windows should be filled with what was essentially municipal and Invernessian, and with what really belonged to, and was intimately connected with, the interest and prosperity of the burgh. It appeared to him to be invidious to represent one section of the community to the exclusion of all others,—the Highland element to the exclusion of the Anglo-Saxon,—especially when Inverness was founded by an Anglo-Saxon king by royal charter, and continued an English town to the present day. It was proposed to put the arms of those who were not ratepayers in preference to those who were,—to make it a barons' hall instead of a burghers'—a hall in borrowed plumes. The recommendation of the Committee was, however, carried by twelve to five.

Penn (Bucks).—Four new stained-glass lights have been fixed in St. Margaret's Church, Penn, Bucks. Two by Sir Philip Rose, bart., of Rayners; the subjects are St. Margaret and St. Lucia; and two by Lady Margaret Rose, in memory to Mrs. Lucy de Saint Croix, consisting of the Charities, and the Saint Croix arms in the traceries. They have been executed by Messrs. Mayer & Co., of Grosvenor-street and Munich, after designs by Mr. Henry G. Liley, of Hammersmith.

Hove.—A stained glass window has just been fixed in the west end of St. Patrick's Church, Cambridge-road, Hove, Brighton. The window illustrates the life of the patron saint, whose figure is prominently set forward in the centre of the design, occupying the upper portion of the central light. It is richly canopied, and is nearly life-sized. Associated with the figure are a series of twenty-three pictures, setting forth many of the principal and interesting incidents in the life of the patron saint. The window has been put in, at a cost of several hundred pounds, by Messrs. Clayton & Bell, of London.

Books.

Farming for Pleasure and Profit. By ARTHUR ROLAND. Edited by William H. Ablett. 1. Dairy Farming, Management of Cows, &c. 2nd Section. Poultry-keeping. London: Chapman & Hall. 1879.

THE author of these neat little volumes thinks there are many persons who would gladly supplement their incomes if they could see their way clear to do it, by entering upon rural occupations which are congenial to their taste, but who are deterred by the want of a little practical knowledge; and as he himself was at one time in that position, and has gradually acquired knowledge and skill in such matters, he has been persuaded to give others the advantage of it. We are free to confess that in the course of our own experiences we have not usually found amateur farmers make much money by their doings. It depends, however, a good deal on natural aptitude and previous occupations and tendencies, and those who feel an inclination this way, as well as many who are already engaged in agricultural pursuits without any knowledge, and so are wholly in the hands of their assistants, cannot do better than obtain Mr. Roland's books. When they have mastered their contents, they will certainly find themselves in a much better and more agreeable position than they were before, and may be able to attain that long and indeed justly praised distinction of having made two blades of grass grow in the space which formerly produced but one.

We take a passage from the volume on Dairy Farming as a specimen of the style of the book:—

"By having a handy man or two about the place, nearly all the tradesmen's bills can be saved. Our jobs may not be done so thoroughly, but they answer my purpose very well; and we are in the habit of 'knocking up' quite extensive erections and conveniences out of *hurdles*, which we thatch with straw or furze. Is a cow-shed wanted in a distant part—perhaps at the extreme end of my little farm, which is of a long straggling character? We fell a few straight young fir-trees from out of the plantation, which we fix as uprights at the corners, and at convenient distances, to act as supports for others, placed across them at top; and fill up the spaces, and cover in the roof with thatched hurdles. A large roomy building is thus constructed by my men in a very short time. If a door is wanted, so that the whole may be closed entirely in, one hurdle placed upright, and working on stout 'withy' hinges, gives us a door at once. In this way we build sheds for the cows, which gladly avail themselves of them in hot weather, to get away from the flies; and we have these handy erections all over the place, wherever they are wanted, and pull them down without ceremony when they are not required to be permanent and we can do without them. Some time ago, being desirous of keeping my breed of black Spanish fowls distinct from the others, my foreman's wife, who lives in a cottage on the land, which stands by itself, but without any out-building save their own, agreed to look after them, and we accordingly put up a fowl-house of the above-named materials. It is warm, roomy, and everything that can be desired for the purpose, and in one corner of it my foreman keeps things, for which he was sadly pinched for room before, having rigged up some shelves within it, the opposite end being used for the fowls' roosting-place. To me, all these little improvements are a constant source of interest, and I make this digression, in order to show how comparatively easily things may be done where one has the right sort of men about, who can turn their hands to something a little different to ordinary farm work. It is not, of course, necessary that they *all* should be able to do this, but out of a number of men, two or three could easily be found who would prove useful upon these emergencies. In some parts of the country, as in Devonshire, 'stud and mud' houses are built, the walls being made up of straw mixed with earth wetted, soûs, etc. These get firm and dry, and are 'rough-cast' outside and whitewashed, and an erection of this sort on a small scale would answer as well for many purposes as a proper brick building. To the citizen, and dweller in towns, who has to pay for everything that is brought to him, the item of carriage in some of the bulkier articles forming the greater portion of the cost, this sort of thing cannot be so readily realised; but in the country, often, the stones, which sometimes can be used for these purposes, and always the earth, are beneath one's feet for use. Tiles, as a roofing for a dairy-house, are objectionable. They are hot in summer and cold in winter, and a thatched roof is perhaps as good as any for the opposite reasons; but there is one drawback, that when a thatch gets old, it is apt to get musty, and therefore liable to harbour vermin. Good thick slates form the best roofing, being more impervious to the weather than any other material. Slate, indeed, should be used wherever it can in a dairy, even for the floors, for they imbibe less moisture than bricks. For, although water may be occasionally used in a dairy to advantage, as I have before instanced, yet, as a rule, it should be kept as dry as possible. When the floor is laid with brick, the spilled milk gets into the crannies, and also the water, and from these a certain amount of unpleasant odour will arise, however trifling, so that a slate flooring, raised a few inches above the outer ground, to make sure of a fall for water, is preferable to anything else; and any one making new arrangements in connexion with his dairies should have recourse to slate as much as possible, and a floor with slanting gutters, to carry off the water used in washing, or 'swilling' down, will be found advantageous. In the same way a slate table will be liked by those who make use of them, but slate is not always so procurable as slabs of stone, or pavement, and one has to deal often with the materials which are readiest to hand. Marble is affected by many gentlemen who like to see their dairies handsomely fitted up, but slate is even preferable to marble, fishmongers finding that it preserves fish twenty-four hours longer than marble does. Slates are easily laid upon a bed of mortar upon the ground, and where the earth is loose or soft a bottom of concrete should be first spread. This is composed of seven parts of dry gravel, free from clay or loam, mixed with one part of pounded quick-lime, mixed with water at the time of using it, till it attains the consistency of thick mortar. A little Portland cement would be found very useful in stopping up chinks and crannies in the floors of dairies. When it is necessary to build a new dairy altogether, a very economical method is to set up a framework of timber quartering, cased outside with half-inch slates, the cavities between the quarters inside being filled up solid with concrete, made as before described, or lime and hair mortar, with rubble of bricks, or stone, and made smooth inside with the trowel. When lime is used it preserves the timber from decaying."

VARIORUM.

ACCORDING to the *Parisian*,—"The extension of the present canal system is exciting much attention in France, both from the recognised necessity of largely increasing the facilities for internal communication, and the large outlay, about 37,000,000*l*., which the new works will cost. The canals now existing are about 3,000 miles in length, and among the proposals on the *tapis* are the construction of a canal from the Oise to the Aisne; the canalisation of the rivers Engre, Scarpe, Authie, Canche, Ternoise, Clarence, Liane, Upper Lys, and Upper Aa; the connexion of the Upper Scarpe with the Authie, of the Canche with the Ternoise and Clarence, and of the Liane with either the Upper Lys or the Upper Aa. A direct waterway from the Nord to Paris and Rouen will be of great benefit to the industries of Northern France, and it is proposed to obtain this by a canal which will leave the Deûle near Courrières, pass close by Lens, Arras, Bapaume, and Peronne, to join the Oise at Noyon. This would shorten the present route from Dunkirk, Lille, and the coalfield of the Pas-de-Calais to Paris by more than fifty kilomètres, and would represent on coal a saving of 1 fr. per ton. By making this connexion between the Deûle, Scarpe, Somme, and Oise, a very important link would be completed in the great interior waterway between Calais and Dunkirk to Marseilles."—— In the course of an answer to an inquiry why so little really good sculpture is now produced, *Replies* (a new paper, which is apparently conducted with much intelligence) says:—"It is almost too much to expect that sculptors of the present day will ever produce such noble work as that which the early Greeks have left in their Parthenon; nor can we hope that efforts equal in merit to the Niobe, the Laocoön, and other well-known marbles, will be repeated. Sculpture subjects are not so susceptible of variety of treatment as in other arts, and it is not so easy to ring the changes, so to speak, on Venuses, Dianas, Gladiators, and Apollos, especially when unfavourable comparisons might be made with others of the kind. Still, the field has not been altogether exhausted in these directions, and there may yet arise an entirely new conception of Cupid and Psyche, of Eve at the Fountain, of the Dancing Fawn, or the Bowling Discobolus, just as there may yet exist, or remain to be born, as many great sculptors as have lived since the days of Praxiteles, of Cleomenes, and of Michelangelo. That there has been, and still is, more than a disposition to raise the tone of modern sculpture, no one acquainted with the best productions of Canova, of John Gibson, Bailey, Theed, Hiram Powers, Thorwaldsen, Flaxman, Foley, Noble, and other remarkable sculptors of a modern period, will deny; and that there are living among us at the present day more than one who possess many of the best qualifications which have belonged to great sculptors, will be conceded by all who were only a short while since enraptured by Leighton's 'Athlete,' and by a work of Richmond's, representing a youth in the act of running, which was represented at the Grosvenor Gallery. In spite of the undoubted genius which our illustrious President displays in his first important attempt in the sculptor's art, it is more than doubtful whether so formidable a work would ever have been undertaken had it not been that the accomplished gentleman was already so far independent of worldly patronage as to enable him to carry out his ambitious venture 'regardless,'—to speak in common parlance,—'of expense.'"

Miscellanea.

Liverpool Engineering Society.—The first meeting of this Society since the summer recess was held on the 10th inst., when a paper was read by Mr. E. C. V. Petherick, on "Pumps and Pumping Gear." The author described the various classes of pumps, their construction and maintenance, and went on to consider the necessary qualifications of pump-valves for various purposes, their design and arrangement; also the air-vessels, stand-pipes, rods, and other gear necessary for pumping. The paper was extensively illustrated by a series of diagrams.

Local Maladministration.—At a meeting of the Hexham Local Board of Health held last week, a communication was read from the Local Government Board, enclosing copy of a letter which that Board had received from Mr. J. S. Hodgson, a resident of the town, complaining of the Local Board's default in the management of the town's sanitary arrangements. The neglect of sewer-flushing and inattention to the cleansing of the ventilating-grates were the objections most dwelt upon in the complaint, the defective design and execution of the private drainage and water-fittings being also pointed out. The letter and enclosure were ultimately referred to the Works Committee.

Lighthouse near Swanage.—The contracts for the erection of the lighthouse at Anvil Point, near Swanage, have been recently opened, and it is stated that the tender of Mr. S. Clarke, of Poole, has been accepted. The lighthouse is to be built of Purbeck stone, and the total cost will be about 5,000*l*. The lighthouse will be approachable from the land, and will be situated on a high rock. The lantern will be fixed at a height of something like 300 feet above the sea level.

Mrs. E. M. Ward's Classes.—We have already mentioned the establishment by Mrs. Ward of classes for the study of painting and drawing by ladies at William-street, Lowndes-square, and some of our readers may be glad to know that the pupils have this week re-assembled. Mr. Frith, R.A., and Mr. Horsley, R.A., have visited the school and expressed themselves as much pleased with the teaching and the work done.

Paris International Exhibition.—The reports on the Paris Exhibition, made by selected artisans who were sent out last year by the Society of Arts, are now in the press, and will be published immediately. In order to bring them within the reach of the classes chiefly interested, the reports have been arranged and printed in eleven classes. Messrs. Sampson Low are the publishers.

The Proposed Theatre in the Strand.—It is stated that "unforeseen difficulties" have compelled Mr. Toole to abandon, at least for the present, his cherished project of building a new theatre for himself in the Strand, notwithstanding that (according to the *Daily News*) things had so far progressed that plans were completed, drawings of the intended buildings were made, exits and entrances were planned, and all was in train for the addition of a new playhouse to the long list of metropolitan places of entertainment, when questions of "ancient lights" and the large demands of holders of adjacent property necessary to give due access to the theatre, were found to present insurmountable obstacles. To build a theatre in the Strand would seem to be a very costly undertaking. It is stated that in the case of the intended site of "Toole's Theatre," there were no fewer than five properties to be negotiated for, exclusive of what was required for convenient approaches. At present these properties, which lie back some 50 ft. from the main thoroughfare, are occupied only by poor buildings—a common lodging-house, a barber's shop, and so forth. Yet the price of the freehold, as conditionally arranged, is said to have amounted to no less than 23,000*l*. With the other arrangements necessary, and the cost of the building, the total expense of the project is put at not far short of 40,000*l*. When the project of building a theatre on the site of Exeter Hall was discussed some months ago, no less than 100,000*l*. was demanded; but this amount included the value of the adjacent hotel, which the purchasers were to undertake to rebuild on a grand scale. In the face of the difficulties which have thus beset him, Mr. Toole has for the present abandoned his scheme, and has taken a short lease of the "Folly" Theatre, in King William-street, Strand, which he will open in October. In little more than two years hence he will have to vacate this building, which is destined to be demolished to allow of the enlargement of the Charing-cross Hospital.

Assyrian Exploration.—It is stated that the trustees of the British Museum have appointed a successor to Mr. Hormuzd Rassam in the work of Assyrian exploration, viz., Lieutenant Kitchener, R.E., whose name has for many years been connected with the work of the Palestine Exploration Fund, and who will, as soon as official duties permit, start for Mosul. Lieutenant Kitchener has only recently returned from Cyprus, where he had been sent to arrange for the Ordnance survey of that island. Without saying anything in deprecation of this appointment (if it has been made), it seems to us matter for regret that Mr. St. Chad Boscawen, late of the British Museum, is not to be associated with the expedition. Mr. Boscawen, whose labours as an Assyriologist are widely recognised, is, we believe, about to start for the banks of the Tigris in pursuit of his investigations. His special qualifications for such an enterprise were borne testimony to at a recent meeting held at the Royal School of Mines, Jermyn-street (*Builder*, p. 864, *ante*), upon which occasion Mr. Hormuzd Rassam said, "if he were going out again, he should only ask that Mr. Boscawen might accompany him."

Practical Mechanics at Eton College.—The new drill-hall and school of mechanics, situate on the west of the gas-works, is nearly finished. The factory is a building of three floors, which are being fitted with various mechanical appliances, lathes, and machinery, the motive power consisting of an eight-horse power gas-engine, manufactured by Crossley Brothers, of Manchester. Mr. Francis M. Newton, C.E., an old Etonian, has been selected as the first instructor in practical mechanics for the college, and he will commence his course with about forty pupils as soon as the students re-assemble.

Engineerships, Liverpool.—The Liverpool Town Council has substantially adopted the recommendations of the special committee appointed to consider the subject of the severance of the offices and duties of Borough and Water Engineer. As already stated (see p. 1,009, *ante*), the committee recommended that the offices should be made distinct; that Mr. G. F. Deacon (the present Borough and Water Engineer) be elected Water Engineer, at a salary of 1,200*l*. per annum; and that a Borough Engineer be appointed at a salary of 1,000*l*. per annum. The first two recommendations were adopted in their entirety, but an amendment to reduce the salary of the proposed Borough Engineer was carried by 22 to 21 votes.

Undercutting.—At a recent meeting of the Shrewsbury Board the chairman remarked as to the proposed Wrekin-road school, that they had had two schools built in the district, and each under different architects, and the question would be,—Should they put the building of the new school into the hands of either of those architects, or put it into other hands? Mr. Webb asked who were the two architects; and the chairman replied that the architects for the Hadley schools were Messrs. Bidlake & Fleeming, and for the Lawley schools Mr. Randal. Mr. Webb said he would like to know which were built most satisfactorily to the Board. The chairman said the last school (Lawley) was the most satisfactory one. He could state that the schools had not cost less than from 7*l*. to 7*l*. 10*s*. per child, independently of the masters' houses; yet he had received a communication from an architect which had greatly astonished him. He had sent a bundle of papers giving the average cost of schools he had built, with or without fittings or boundary walls. He would give them a good school without boundary-walls or fittings at the rate of 5*l*. per child, and in proof of that he expressed his willingness to take his commission based on that. It transpired that the gentleman's name was E. H. Lingen-Barker, of Hereford. The question now arose whether they should divide the work,—employ an architect at 2½ per cent., and a clerk of the works at 2½ per cent. After a lengthy consultation it was resolved, upon the proposition of Mr. T. R. Groom, seconded by Mr. Webb, that plans and specifications be invited by advertisement for the Wrekin-road schools, with an intimation that the one which was accepted should receive 2½ per cent.

The Proposed New Musical Corporation. We are glad to notice that the proposal for the establishment of a representative musical institution, embracing in one body the most eminent practical musicians and the most influential patrons of music, the probability of which we were the first to make known, is taking definite shape. It was proposed to seek co-operation and support from all musical societies of eminence, and to begin by inviting a union between the Royal Academy of Music and the National Training School for Music. An executive committee, with Prince Christian at its head, was formed to carry the scheme into effect, and at once proceeded to open negotiations with the Royal Academy and the National Training School. Both institutions accepted the principle of union, and appointed committees to consider the details. The whole of the year has been occupied in discussing the terms of union, which consist, in effect, in the acceptance of a charter uniting the two bodies; such an acceptance to be binding only in the event of there being secured, through the agency of the executive committee, an annual income of at least 3,000*l*., with other advantages, for the purpose of carrying into effect the objects of the new institution. The Duke of Edinburgh has recently communicated to Prince Christian the unanimous acceptance by the Training School of the terms of union. The charter has been very fully discussed between the Royal Academy and Prince Christian's Committee, and there remain only to be considered a few matters of minor import. Owing to the illness of Lord Dudley, the president of the Royal Academy, it is not anticipated that the matter will be finally settled until the end of the year.

New Board School in Glasgow.—Mathieson-street school, situated in the Hutchesontown district, was formally opened by the Glasgow School Board on the 1st inst. The total cost of the structure is 8,500*l*., and it is to accommodate 900 scholars, at an average cost of 9*l*. 8*s*. 10½*d*. per head, but adding the cost of the site (1,921*l*. 6*s*. 10*d*.), the average per scholar is 11*l*. 11*s*. 7*d*.

The New Market at Stratford.—In connexion with the notice of this market in our last issue, we would add that the whole of the ironwork, viz., the columns, iron roof principals, lattice girders, &c., of which there is a large number, was manufactured and supplied by Messrs. Stanley, Hall, & Co.

The Pulsometer.—This pump has obtained another silver medal (making in all two gold and five silver medals awarded to it). This last was awarded at the Manchester meeting of the Royal Manchester, Liverpool, and North Lancashire Agricultural Society, held from the 4th to the 8th of September.

The Halifax Commercial Bank.—We may add to the list of contractors given in our description of this bank last week the names of Messrs. Salmon, Barnes, & Co., of Ulverston, who are supplying their Patent Iron Bank Shutters for the various windows and doors.

TENDERS

For the erection of three houses, at Nunhead-grove, S.E. Mr. R. Cruwys, architect. Materials part found. Baths and fittings excluded:—

Holcombe (accepted)	£1,050 0 0

For Southwell Minster Church Restoration. Mr. Ewan Christian, architect:—

Estcourt	18,480 0 0
Thompson	18,456 10 0
Fast	18,455 0 0
Williams	18,218 0 0
Clipsham	18,171 0 0

For alterations at the Bell and Horns, Brompton. Mr. J. Edwards, architect. No quantities:—

Sprague & Foreman	£987 0 0
Maraland	838 0 0
Ansell	821 0 0
Langmead & Way	725 0 0

For alterations and fittings, 164, Oxford-street, for Messrs. Gooch & Co. Mr. George Edwards, architect:—

Sanders	£1,019 0 0
Cullum	968 0 0
Lidstone & Sons	900 0 0
Richardson	795 0 0
King	768 0 0
Martin, Wells, & Co. (accepted)	750 0 0

For additions to Peckham House, Rye-lane, Peckham, for Dr. Stocker. Messrs. Whitfield & Thomas, architects. Quantities supplied by Mr. T. M. Deacon:—

Clemence	£3,645 0 0
Bangs & Co.	3,560 0 0
Jarrett	3,428 0 0
Colls & Son	3,400 0 0
Higgs & Hill	3,347 0 0
Downs & Co.	3,260 0 0
Bowyer	3,200 0 0
Deards	3,157 0 0
Thomas	2,850 0 0

For new public offices, for the Corporation of Southampton. Mr. Jas. Lemon, architect:—

Stevens & Son	£3,410 0 0
Sanders	3,198 0 0
Rowland	3,010 0 0
Bull & Sons	2,830 0 0
Crook (accepted)	2,797 0 0

For proposed new schools, &c., at Bromsgrove. Messrs. Day & Yates, architects. Quantities supplied:—

Mead	£4,745 3 0
Kendrick	4,391 8 6
Cook & Harris	4,389 16 0
Bate	4,298 0 0
Smith	4,297 16 0
Simmonds	4,151 8 3
Jones & Son	4,143 16 0
Smith & Son	4,115 0 0
Dixon	4,017 16 0
Corbett	3,984 13 0
Read & Amess	3,907 16 0
Tilt & Fisher	3,827 15 9
Trewood	3,777 0 0
Dawson & Bradbury	3,612 16 0
Vardey & Winter	3,590 10 0
Marshall	3,589 5 0
Brazier & Weaver (accepted)	3,563 10 0
Horton	3,404 16 0
Milward	3,227 0 0
Pritchard & Feltham	3,205 16 0
Widdowson	3,070 16 0

For mansion at Lea Park, Witley, for Mr. W. H. Stone. Mr. E. W. Drew, architect. Quantities by Mr. T. M. Deacon:—

Higgs & Hill	£17,557 0 0
Dove Bros.	14,799 0 0
Pink	14,772 0 0
Booth	14,650 0 0
Rider & Son	14,493 0 0
Franklin	14,265 0 0
Goddard & Son	13,772 0 0
Parnell & Sons	13,758 0 0
Hale & Sons	12,970 10 0

For dwelling-house at Mill Hill, for Canon Benoit:—

Butler (accepted)	£750 0 0

For new farm buildings at Pipton, Glasbury, for Mr. Thomas Wood. Mr. Charles Butcher, architect:—

Hughes	£894 10 0
Webb	890 0 0
Price	880 0 0
Powell (accepted)	820 0 0

For the construction of the continuation of Dunstan's-road, on the British Land Company's Estate, at Dulwich. Mr. Henry B. Michell, surveyor:—

Thompson & Covington (accepted)	£1,755 0 0

For the drainage of Sheepshed. Mr. E. F. Stephens, engineer:—

Young & Williams	£5,400 0 0
Coker	4,700 0 0
Cowdery & Sons	4,465 16 0
Taylor	4,329 0 0
Bell	4,037 16 11
Dovener & Quesnel	3,695 0 0
De Witt	3,698 0 0
Small & Sons	3,530 0 0
Beck	3,429 0 0
Stevenson	3,400 0 0
Meats Bros.	3,399 0 0
Dodds & Co.	3,250 0 0
J. & G. Tomlinson	3,250 0 0
Lea	3,100 0 0
Fotherby & Son	2,823 9 1½

For works for the Central London School District:—

For additions and alterations at the schools at Hanwell. Mr. William Hudson, architect. Quantities by Messrs. J. W. Forge & A. B. Hudson:—

Condor	£16,991	0	0
T. G. & R. Vigor	15,970	0	0
Patrick & Son	15,886	0	0
Downes	15,375	0	0
Gibson	15,000	0	0
Rider & Sons	14,988	0	0
Chappell	14,699	0	0
Verum & Ewens	14,390	0	0
Braid & Co.	14,240	0	0
Stephenson	14,100	0	0
Scrivener & Co.	13,897	0	0
Nye	13,848	0	0
Nightingale	13,840	0	0
Haynes	13,700	0	0
Sheppard	13,437	0	0
Higgs & Hill	13,420	0	0

For ironfounders' and other works in the erection of tanks and heating apparatus:—

G. F. & R. Vigor	£1,597	0	0
McLean	1,540	0	0
Abercrombie & Sons	1,435	0	0
J. O. & C. E. Brettel	1,430	0	0
Clements	1,383	0	0
Turner & Co.	1,350	0	0
Higgs & Hill	1,290	0	0
J. & P. May	1,200	0	0
Laidlaw & Son	1,170	0	0
Thames Bank Iron Co.	1,150	0	0
Hett	1,145	0	0
Pennycook, Sons, & Co.	1,120	0	0
Bacon & Co.	1,080	0	0
Land & Co.	1,020	0	0
Benham & Sons	1,012	0	0
Beckett Bros.	1,002	10	0
Derham	949	10	0
Gimson & Co.	891	0	0
Jukes, Coulson, & Co.	860	0	0

For the erection of six cottages, at Edmonton. Mr. Robert Blackmore, architect:—

Uff (accepted)	£950	0	0

For the erection of five houses, at Southgate. Mr. Robert Blackmore, architect:—

Kees	£3,227	0	0
Harriss	2,469	0	0
Webb & Co. (accepted)	1,912	10	0

For the erection of four villa residences, at Norwood Mr. Robert Blackmore, architect:—

Spelt	£2,480	0	0
Punchard	2,468	0	0
Street	2,200	0	0
Webb & Co. (accepted)	2,080	0	0
Surridge	2,037	0	0
Warr (withdrawn)	1,675	0	0

For the erection of two shops, at Green-lanes, Stoke Newington, for Messrs. Hall & Palmer. Mr. Robert Blackmore, architect:—

Uff	£959	0	0
Trigg	900	0	0
Skipper	877	17	0
Webb & Co. (accepted)	836	14	0

For alterations and additions to Camberwell House Lunatic Asylum. Mr. C. Innes, architect. Quantities by Mr. W. Birdseye:—

G. & S. Fisher	£3,499	0	0
Bangs & Co.	3,350	0	0
Browne & Robinson	3,284	0	0
Brass	3,279	0	0
Fish	3,258	0	0
Conder	3,162	0	0
Higgs & Hill	3,098	0	0
Shapley (accepted)	2,990	0	0

TO CORRESPONDENTS.

Errata.—"A Famous Roman Arsenal."—In the article so titled, the name of the river Argens was, by a clerical error, printed Argens, as also that of the Siagne, Siogne.

Messrs. C.—L. L.—A. S.—R. P.—E. R.—Myra—L. & W.—R. S.—H. P.—C. S.—J. B. E.—C. E. S.—Col. D.—E. H.—J. O. C.—J. T.—J. S.—S. H. & Co.—P. & P.—T. M. D.—E. W.—T. T. G.—J. W.—J. C.—W. T. W.—F. R.—E. F. S.—W. H.—H. B. M.—C. B.—S. B. & Co.—R. W.—North Ritherden (should have written earlier, and with right name and address).—F. E. (an application to Mr. Ferrest, at the Institution, in Great George-street, S.W., will obtain the necessary papers).—G. H. (notice was already in type).

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

Bath Stone of Best Quality.
RANDELL, SAUNDERS, & CO. (Limited), Quarrymen and Stone Merchants.
List of Prices at the Quarries and Depôts; also cost of transit to any part of the Kingdom, on application to
Bath Stone Office, Corsham, Wilts. [Advt.]

Bath Freestone in Blocks of all sizes, warranted sound, and delivered at any Port or Railway Station.—YOCKNEY & COMPANY, Sole Owners of the CORSHAM DOWN QUARRY, Corsham, Wilts, to whom all letters should be addressed. [ADVT.]

Doulting Freestone and Ham Hill Stone of best quality. Prices, delivered at any part of the United Kingdom, given on application to CHARLES TRASK, Norton-sub-Hamdon, Ilminster, Somerset. Agent: E. Crickmay, 4, Agar-street, London, W.C.—[ADVT.]

Asphalte.
Seyssel, Patent Metallic Lava, and White Asphaltes.
M. STODART & CO.
Office:
No. 90, Cannon-street, E.C. [ADVT.]

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. [ADVT.]

J. Sessions & Sons, Docks, Gloucester, Manufacturers of ENAMELLED SLATE and MARBLE CHIMNEY-PIECES, URINALS, &c. WELSH ROOFING SLATES direct from Quarries to any Station in the Kingdom. Manufacturers of Joinery & Mouldings. [ADVT.]

Whitland Abbey Green Slates.—These slates are of a grey green tint, are stout, and made in all sizes. A large stock available for immediate delivery.—For further particulars, apply to MANAGER, Clynderwen, R.S.O., Carmarthenshire. [ADVT.]

J. L. BACON & CO.
MANUFACTURERS OF
IMPROVED HOT-WATER APPARATUS,
FOR WARMING AND VENTILATING
Private Houses, Churches, Schools, Hospitals, Manufactories, Greenhouses, &c.
OFFICES AND SHOW-ROOMS:—
No. 34, UPPER GLOUCESTER PLACE, DORSET SQUARE, LONDON, N.W.
Illustrated Pamphlet on "Heating" post free for Twelve Stamps.

Roofing Felts.—F. Braby & Co.

INODOROUS, SARKING, SHEATHING, AND HAIR FELTS, KEPT ALWAYS IN STOCK. MANUFACTURERS OF PERFORATED ZINC, PERFORATED COPPER, AND PERFORATED IRON, IN VARIOUS DESIGNS AND GAUGES.

Wrought Iron Tanks.—F. Braby & Co.

PAINTED AND GALVANISED, OF IMPROVED MANUFACTURE.

Corrugated Iron.—F. Braby & Co.

GALVANISED AND BLACK IN ALL GAUGES KEPT IN STOCK. ZINC WORK OF ALL KINDS.

FITZROY WORKS, 356 to 369, EUSTON ROAD, LONDON.
Hatton Garden, Liverpool; Great Clyde Street, Glasgow; and at Cyprus.

ZINC ROOFING.
CORRUGATED IRON ROOFING.

ESTIMATES FOR ABOVE, EITHER PREPARED READY FOR FIXING, OR FIXED COMPLETE, ON APPLICATION TO

TREGGON & CO.

(The oldest Firm in the Trade, Mr. H. Treggon having been the first to introduce Zinc Roofing in this country),

YORK WORKS, BREWERY ROAD, LONDON, N.
AND 23, JEWIN STREET, E.C.